REPORT RESUMES

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AN INVESTIGATION OF FACTORS INVOLVED IN THE EDUCATIONAL PLACEMENT OF MENTALLY RETARDED CHILDREN.

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SIGNIFICANT FACTORS INVOLVED IN LEARNING AND ADJUSTMENT OF RETARDED CHILDREN IN SPECIAL CLASSES AS COMPARED WITH THOSE REMAINING IN REGULAR CLASSROOMS WERE ASSESSED. EACH GROUP WAS EVALUATED WITH INSTRUMENTS TESTING INTELLECTUAL CAPACITY, SCHOOL ACHIEVEMENTS, SOCIAL ACCEPTABILITY, AND ADJUSTMENT TO THEIR TEACHERS AND PEER GROUPS. IT WAS FOUND THAT SUCH FACTORS AS PHYSIOLOGICAL AND PSYCHOLOGICAL DIFFERENCES MAY INFLUENCE ACCEPTANCE IN SPECIAL CLASSES, AND MAY ALSO, IN OUR PRESENT EDUCATIONAL SYSTEM, MEAN THAT MANY CHILDREN, RECOGNIZED AS EDUCABLE ON THE BASIS OF IQ LEVEL, ARE BEING DEPRIVED OF EDUCATION ENTIRELY. THE ACCEPTANCE OF SPECIAL CLASS PROGRAMS AS THE DESIRABLE TYPE OF EDUCATIONAL PLACEMENT FOR RETARDED CHILDREN HAS BEEN BASED ON THE ASSUMPTION THAT SUCH PROGRAMS ARE ABLE TO ACHIEVE RESULTS DIFFERENT FROM THOSE ACHIEVABLE IN A REGULAR CLASS SETTING. THE EVIDENCE OF THIS STUDY INDICATES THAT THESE DIFFERENCES DO ACTUALLY EXIST. THE SUPERIOR ACADEMIC ACHIEVEMENT NOTED FOR THE REGULAR CLASS GROUP IS BALANCED BY THE SUPERIOR SOCIAL ADJUSTMENT OF THE SPECIAL CLASS GROUP. IT IS POSSIBLE THAT RETARDED CHILDREN IN SPECIAL CLASSES COULD BE BROUGHT CLOSER TO THEIR EXPECTED LEVEL OF ACHIEVEMENT THAN IS AT PRESENT REALIZED IN EITHER TYPE OF EDUCATIONAL PLACEMENT. (GC)

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A Study of Differences Between Children in Special and Regular Classes in Ohio

The Ohio State University
Columbus, Ohio

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AN INVESTIGATION OF FACTORS INVOLVED IN THE EDUCATIONAL PLACEMENT OF MENTALLY RETARDED CHILDREN

A Study of Differences Between Children in Special and Regular Classes in Ohio

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CHAPTER I. BACKGROUND OF THE STUDY

Statement of the Problem

Implicit in the tremendous expansion of special class programs in public schools throughout the United States is the assumption that special class placement is superior to other educational provisions for mentally retarded children. With the exception, however, of a few studies concerning the relative social acceptability and achievement of children placed in special classes and of those placed in regular classes, this assumption has not been based on carefully controlled studies. The present investigation was therefore designed to furnish a more adequate test of the assumption through the identification and assessment of some of the significant factors involved in the educational placement of mentally retarded children.

The state of Ohio seemed to furnish facilities and materials well adapted to the purposes of such a study. The economic and sociological diversification of the state would provide balanced data difficult to obtain in a predominantly agricultural state, for example, or in one primarily industrial. In addition, the existence of long-established special-class programs in some communities made possible stable comparisons with the regular-class programs maintained in other communities. Research devoted to study of special-class versus regular-class placement in the state of Ohio has been conducted from January 1, 1957, to December 31, 1958, by personnel in the Division of Special Education, Bureau of Educational Research and Service of The Ohio State University, Columbus, Ohio. It is hoped that from this study implications may be drawn which will prove valid in general for the educational placement of retarded children.

Review of Related Literature

Research studies atempting to support either special or regular class placement have been appearing from time to time throughout the past twenty-five years. Two early studies by Bennett and Pertsch (4) (22) found that retarded children in special classes compared unfavorably with other retarded children in regular classrooms. However, Pertsch's study was carried out in a single community where some retarded children had been placed in special classes, while others had not. The author himself questions the validity of the study, for, with a selective factor operating, the groups obviously could not be assumed to be comparable. Because there were not enough classes to serve them all, only retarded children with exaggerated problems would be placed in special groups. Bennett's study likewise represents one of the many relevant research attempts in which this type of selectivity appears as an uncontrolled factor. As a result, her special class group had almost twice as many speech defects as did the retarded children in regular classrooms, along with poorer vision, more ear defects, and poorer motor coordination. Again, the neediest prospects had been selected for special placement. It would therefore appear that in any one community which has special classes, the retarded child placed in them would not be likely to compare favorably with the retarded child remaining in the regular class.

A different approach to the problem was that of Luchins and Luchins (19), who attempted to ascertain children's feelings toward homogeneous groups. Their study was conducted in New York City at a time when children were placed in bright or dull groups. A high percentage of the children interviewed (including the dull) preferred and believed their parents would prefer them to be placed in the bright classes.

In the next decade (the 1940's) much thought was given to the problem of the social needs of retarded children and youth. This thinking is summed up in a statement by Voelker: (31)

> Educators of the mentally retarded have long recognized the importance of developing worthwhile social attitudes and habits in mentally defective children. Some authorities believe that this phase of the educational program should receive as much, or more, emphasis than that given to academic subjects. That a well-adjusted personality is of real value to the mentally deficient individual in maintaining his rightful position in the community is a truism. Programs for the development of social attitudes have been instituted in most of the schools where work is being done with mentally retarded pupils.

In view of this emphasis, it is logical to expect that many of the current research studies would attempt to throw light on the problems pertinent to the social development of these children. It was important, for instance, to learn whether maximal social development could better occur in a special or in a regular class setting.

Some studies which appeared during this period examined the relationship of intelligence and social status (7, 11, 14, 21, 28). A common conclusion of these studies was that some correlation does exist between the intelligence levels of mutual friends. These conclusions are only peripherally related to the present investigation, however, since the studies did not include children in the mentally retarded group. On the other hand, Bedoian's (3) research directly concerned the problem of social acceptance of under-age, at-age, and over-age pupils, the assumption being that under-age students tend to be bright and over-age students to be dull. The author found that the scores of the over-age students indicated lower social acceptance by peers than did those of the other two groups. It appeared not only that they were ignored, but that they were actively disliked by their classmates.

A further study by Johnson (15) proposed to investigate a special aspect of the social position of mentally handicapped children who were in regular classes. His purpose was to ascertain whether, and to what extent, such children were accepted, isolated or rejected. He also sought to determine differences in social position among the mentally handicapped in the lowest, the highest, and the borderline mental groups. Through the selection of cases in two communities which did not have special classes, this study avoided the difficulty in the Bennett and Pertsch studies and therefore proves more valid and pertinent for present purposes. The various tests and sociometric techniques used by Johnson revealed not only that mentally handicapped children in regular classrooms are less accepted and more rejected than typical children, but also that a direct relationship exists between the level of intellectual retardation and the scores on acceptance-rejection measures. The lower the mean intelligence quotient, the lower the mean acceptance scores and the higher the mean rejection scores obtained. An interesting finding in this study was that low academic ability in itself does not appear to cause rejection. Rather, rejection occurred in response to bullying, fighting, misbehaving, showing off, swearing, lying, and cheating---all unacceptable behaviors resulting from inability or lack of desire to conform to group standards.

Another area of research related to the present investigation concerns the personality status of mentally retarded children. When general personality characteristics are assessed, the literature seems to indicate that the mentally retarded have more personality problems than other types of groups. Among the suggestions made by the authors of these studies was that special education programs be provided to alleviate the problem.

Studies concerned wholly or in part with the academic status of mentally retarded children appear to agree that although they do not achieve according to average norms, they do relatively well when mental abilities and not chronological ages are considered. Fewer studies exist which give clear-cut comparisons between the academic achievement of the children in regular classes and those placed in special classes. Johnson's study, for example, compared retarded children with typical children.

Blatt's study (6), however, which in purpose closely resembles the present research project, did consider the two retarded groups on this variable of academic achievement. Comparing mentally retarded children in regular and special classes, Blatt found no significant differences between the groups in reading, arithmetic and language achievement. An additional finding indicated that both groups of his samples had greater achievement than typical children of the same mental age. A difference existed in the amount of academic improvement from one year to the next in favor of the special class children. This difference, however, may be largely the result of selective factors obviously difficult to eliminate when sampling is made from populations of retarded children who have been placed in special classes. Since waiting lists are common in communities where such groups are maintained, it appears that not all such children can be specially placed. Presumably, the better adjusted and more academically proficient might remain in regular classes even though they qualify in the "educable mentally retarded" range. The greater amount of improvement manifested by those placed in special classes, therefore, may reflect a favorable response to specialized attention on the part of children who achieved below expectancy levels in regular classes.

Blatt's study also demonstrated that, in both groups, retarded children are less physically able than typical children and that they seem to have greater degrees of personality maladjustments. Among the retarded children themselves, those in special classes appear to have more physical defects, but at the same time to be more socially mature and emotionally stable than their peers in regular classes. All of these differences, however, are too slight to be significant.

As attention is turned from the child himself to his teacher, the existing related literature is disappointingly meager. Studies investigating the relationship between the objectives and goals held by teachers and their attitudes toward slow learning children would especially provide useful background for the attempts made in this study to identify attitudinal differences existing between special class and regular class teachers. Unfortunately, however, although there is continuous research in many aspects of the field of education, studies of teacher attitudes have been infrequent. A survey of the literature available suggests that studies have been primarily directed toward evaluating the mental health of teachers in terms of personal adjustment and job satisfaction. The hypotheses were usually attempts to answer the questions: "Do well adjusted teachers have better adjusted children?" and "Does good teacher morale increase teaching effectiveness?" (1, 9, 13, 20, 26, 27, 38)

Studies have also been directed toward identifying the teacher's behavior in the classroom by means of rating scales. Such studies were usually concerned with measuring teacher rapport and child learning. The procedures often used, however, were time consuming; the training of the raters was varied; and the types of student given consideration differed from one study to another so that comparisons could not be made. (2, 12, 18, 25, 29, 35, 36)

Wickman's study (34) first published in 1928, still appears as a major contribution in indicating teacher attitudes toward child behavior. Kaplan (17) conducted a related study in 1952, using a check list of 100 items. In summarizing his findings, he said, "The type of child behavior which distresses teachers suggests that perhaps teachers are being disturbed by child behavior patterns which are normal for children but unpleasant for adults." Blatt (6), in summarizing his study quoted earlier, suggested that special class teachers, because of their special training and experience, may tend to accept retarded children more readily than do regular class teachers.

For the most part, then, comments on teacher attitudes are fragmentary and slight. In making an extensive survey of the literature, Cruickshank (10) has likewise concluded that "Published research dealing with attitudes of teachers toward exceptional children is almost completely lacking."

A similar situation prevails throughout the literature concerned with the educational placement of mentally retarded children. With the exception of the studies by Bennett, Pertsch, and Blatt, such research as exists tends to discuss mentally retarded children in general as compared to typical children. Studies of academic achievement as well as the studies appearing during the forties relative to social development illustrate this tendency. Research on teacher attitudes has been even more general, with no attempt to differentiate on the basis of pupil ability. Although general studies are perhaps an essential preliminary to specific research, the time is at hand for more precise attempts to discriminate among the mentally retarded themselves in the effort to establish sound principles of educational placement.

Need for the Present Study

Estimates indicate that 15 to 20 per cent of educable mentally retarded children (approximately 50-75 IQ) are now enrolled in special classes in public schools or in public or private institutions. The remainder are enrolled in regular classes or are not attending school. For some years, educators have been discussing and debating the relative merits of various classroom settings in fostering maximal learning and development in mentally retarded children. Johnson (16) reports the following conflicting conclusions from a symposium on this subject at the national meeting of the Council for Exceptional Children held in 1950:

(1) Segregation by placement in a special class or school is a frame of mind rather than a physical thing. Special class teachers can provide many contacts with the wider community so that segregation does not actually exist. Conversely, an exceptional child in a regular class may be isolated and segregated although physically placed in a regular classroom.

(2) Placement in a special class for a short period of time may be of value to the exceptional child if it assists him in learning to face the problems of living.

(3) Since a human being is a product of his culture, and his reactions to that culture, segregation for any length of time in a restricted environment would tend to handicap him more than if he had not been placed in the isolated situation.

(4) Segregation takes away the child's feeling of belonging, thus creating feelings of insecurity. He is denied the opportunity of mingling with others, and is consequently denied the accompanying social experiences.

It can thus be seen that educators responsible for educable retarded children express divergent opinions about their placement. These opinions, however, for the most part are untested assumptions which may or may not have validity.

Many problems attend a complete assessment of the situation. Answers must be found to perplexing but crucial questions. In what kind of educational setting, for example, does maximal learning occur for the mentally retarded? Or, indeed, does comparison of educational settings reveal any measurable difference between them? In answering this question, the central problem of the current project, American educators must ultimately answer other questions as well. Perhaps most critical among these is what they hope to achieve through the educative process to which mentally retarded children are submitted. Only after these two questions have been faced may attempts be made to answer other pertinent questions which must be posed before the public can expect the education of its mentally retarded children to be based on principles productive of sound results. Need not only for the present study, but for many others as well, is clearly pressing to the degree that Americans consider the education of the mentally retarded an important matter with significant consequences for the individual and for society.

Statement of Hypotheses

The review of the limited literature related to the problem of educational placement of retarded children has revealed a startling restriction in size of population and geographical areas represented by the various research designs. In no instance has an attempt been made on a state-wide basis to study the problem presented. The present project, then, proposes for the first time to use such a geographical unit, the State of Ohio, to test the following hypotheses regarding the placement of educable retarded children enrolled in its schools:

Hypothesis (1): That scores obtained from the use of various psychological instruments will reveal no statistically significant differences to exist between the retarded children in Regular Classes and those in Special Classes.

Hypothesis (2): That within the range from 50-75 IQ the specific level of tested intellectual functioning of the retarded child has no effect on his learning and adjustment in either type of educational setting.

Hypothesis (3): That certain factors pertinent to the parents of these retarded children will not differentiate between the groups in a significant manner.

Hypothesis (4): That certain factors in the environment of these retarded children will not differentiate between the groups in a significant manner.

Hypothesis (5): That teachers' knowledge about and understanding of the mentally retarded child will not differ from one educational setting to another.

Limitations

The projected research to test the proposed hypotheses was limited to some extent by scarcity of standardized tests for measurement of psychological variables pertinent to the school setting or by incomplete data. For example, lack of diagnostic data in school records prevented any appraisal of differences based on organicity between the Special Class and Regular Class groups. Likewise, inequalities in the completeness of physical data regarding general health, vision, hearing, speech and other disabilities, made it impossible to compare the groups on these variables. Throughout the state, in cities where no special classes for the retarded were maintained, it was difficult to secure subjects for the regular class group because few children in the 50-59 IQ range were enrolled in school. In addition, in some of these cities all IQ test scores of 70 or below appeared on the school records as 70.

Chapter II. DESIGN, METHODOLOGY, AND PROCEDURE

General Design and Procedure

The research design established to test the postulated hypotheses required one group of 100 mentally-retarded children drawn from special classes in the State and a second group of 100 children from regular classes. These children should have a chronological age between 12.0 years and 14.11 years inclusive, with intelligence quotients between 50 and 75 points. Since it seemed that a spurious distribution of cases might be obtained in the absence of a finer breakdown, IQ quotients were to be grouped in five-point intervals within this range, and numerical representation for each resulting age and IQ level was determined in proportion to the total relevant population. Such stratified sampling would assure that realisitic representation of both age and IQ would be achieved.

The actual sample for the study consists of 194 children enrolled in the public schools of Ohio. The sample appears as 100 children from special classes for slow-learning children in 16 different school systems and 94 similar children from 20 different school systems which had no placement provisions for retarded children other than the regular classroom. Rigid adherence to the established criteria accounts for the discrepancy between the proposed and the actual numbers of the sample. The losses in the regular class population through the failure of the children tested to meet one or more of the criteria, along with the extensive screening necessary to find qualifying replacements and the necessity for limiting the testing to the 1957-58 school year, prevented complete realization of the established goal.

For reasons discussed elsewhere in detail (p. 21), the State of Ohio was divided into five geographical areas in selecting the Regular Class population. The material presented in Table 1 identifies the regional representation of both Special and Regular Class groups according to age and IQ. Examination of the

TABLE I

REGIONAL DISTRIBUTION OF SPECIAL CLASS AND REGULAR CLASS GROUPS BY AGE AND IQ

IQ GROUP	REGION	CHRONOLOGICAL AGE 12		13		14		TOTAL	
		Spec. Class	Reg. Class	Spec. Class	Reg. Class	Spec. Class	Reg. Class	Spec. Class	Reg. Class
50-54 (0)	Northeastern	1		1	1	2	1	4	2
	Northwestern			1				1	
	Central						1		1
	Southeastern					1		1	
	Miami Valley		1		1		1		3
Total		1	1	2	2	3	3	6	6
55-59 (1)	Northeastern	2	1	4		2		8	1
	Northwestern						1		1
	Central		1		1	1		1	2
	Southeastern					1		1	
	Miami Valley	1			3		3	1	6
Total		3	2	4	4	4	4	11	10
60-64 (2)	Northeastern	1	2	3	2	3	2	7	6
	Northwestern	1	1	2			2	3	3
	Central	2		1	1	4	2	7	3
	Southeastern								
	Miami Valley	1	2	1	4	1	1	3	7
Total		5	5	7	7	8	7	20	19
65-69 (3)	Northeastern	6	1	5	4	7	1	18	6
	Northwestern		1	2	1	2	1	4	3
	Central	1	3	3		1	3	5	6
	Southeastern				1				1
	Miami Valley	2	2	1	5	1	5	4	12
Total		9	7	11	11	11	10	31	28
70-74 (4)	Northeastern	5	4	5	1	6	3	16	8
	Northwestern	1		3		2	1	6	1
	Central		4		2				6
	Southeastern						1		1
	Miami Valley	3	1	2	6	1	4	6	11
Total		9	9	10	9	9	9	28	27
75 (5)	Northeastern	2	2	1		1	1	4	3
	Northwestern								
	Central								
	Southeastern								
	Miami Valley				1				1
Total		2	2	1	1	1	1	4	4
	TOTAL	29	26	35	34	36	34	100	94

sample reveals that 83 cases or 43 percent of the total 194 children in the study were obtained from the northeastern area of the State. This is an expected result since, because of its heavy concentration of industry, this section of Ohio supports the largest population. Table 2 presents more detailed material by showing not only the regional representation, but also the cities used within each region, along with the number of cases obtained.

Following the identification of the sample populations, the study design called for the administration of a battery of tests and for the accumulation of other data appearing in school records or attainable through questioning of the children or their teachers.

Identification of Special Class Population

Identification of the special-class population was accomplished by consulting the files of classes approved for special subsidy which are maintained by the Division of Special Education of the Ohio State Department of Education in its role as administrator of the funds allocated for the support of special classes in the State of Ohio. These files, which identify each special-class child by name, birthdate, chronological age, sex, intelligence test score, locale, school and teacher, were initially consulted to determine the schools in Ohio offering special class placement to children who had individual intelligence quotients of 75 and below. However, since the criteria of the project proposed the use of children with a chronological age between 12.0 and 14.11 who within the past two years had obtained on the Stanford-Binet Intelligence Test, Form L, a score of 50 through 75 IQ points and who, in addition, had been in a special class in the same school system for the past two years, the Division files likewise proved to be an authoritative guide to the selection of subjects for the study. The number of children meeting the criteria totaled 1659. After the name of each child, his place of residence, school, chronological age,

TABLE 2

REGIONAL REPRESENTATION OF SPECIAL CLASS AND REGULAR CLASS GROUPS BY CITY

REGION	SPECIAL CLASS CITY	NUMBER OF CASES	REGULAR CLASS CITY	NUMBER OF CASES
Northeastern	001	6	510	3
	002	3	515	1
	005	5	516	21
	008	4	518	1
	011	32		
	014	2		
	019	4		
	038	1		
Total	8	57	4	26
Northwestern	020	2	504	3
	055	12	512	5
Total	2	14	2	8
Central	010	1	501	10
	013	11	502	1
	040	1	505	1
			506	2
			509	1
			517	1
			519	2
Total	3	13	7	18
Southeastern	058	2	507	2
Total	1	2	1	2
Miami Valley	009	7	503	5
	015	7	508	2
			511	6
			513	8
			514	7
			520	12
Total	2	14	6	40
GRAND TOTAL	16	100	20	94

birthdate, IQ score, and sex had been recorded, a serial or code number was assigned to each city and to each child in order that a random sampling of cases could later be made. All of these data were then punched on IBM cards and a detailed analysis was made of the total population as shown in Table 3. Cities making special class placement available were also identified, as shown in Table 4.

A later recheck of the original data sheets listing the 1659 children who appeared to qualify as members of the Special Class Group brought to light errors whose correction reduced the number by 144 children representing 19 different cities. This attrition resulted from typographical errors in recording C.A. or IQ data or from inclusion of children whose Binet test had not been administered within the past two years or who had not been in a special class for the specified two-year period. The remaining 1515 children from 46 different cities furnished the pool for random selection to membership in the Special Class Group of the study. Table 5 identifies the number of cities potentially available and actually represented.

The next step was to choose from the pool the specific cases to be studied. A table of random numbers was used to produce a random sample of 100 cases which were then identified according to population representation. This process of random sampling proceeded until a total of 100 cases meeting all requirements was reached. Table 6 shows by city the number of children thus selected, and Table 7 describes their distribution by age, sex, and IQ.

A letter (a copy of which is shown in Appendix, Exhibit 1) was then prepared to be sent to the Superintendents in each of the cities represented by this random selection. The communication served a two-fold purpose: one was to enlist the cooperation of the school system, and the other was to give information about the proposed research. When such cooperation had been secured,

TABLE 3

NUMBER AND PERCENTAGE DISTRIBUTION BY AGE AND IQ GROUP OF TOTAL SPECIAL CLASS POPULATION, AND NUMBER AND PERCENTAGE AT EACH AGE IN EACH IQ GROUP TO BE RANDOMLY SAMPLED

IQ GROUP	Chronological Age										No. & % in Each IQ Gp. to be Randomly Sampled	
	12			13			14					
	Total Number in Population	% to Total in Age Group	No. Sampled to % Total Representation	Total Number in Population	% to Total in Age Group	No. Sampled to % Total Representation	Total Number in Population	% to Total in Age Group	No. Sampled to % Total Representation	Total Number in Population	Total Representation for Each Group	% Representation for Each IQ Group
50-54	20	4	1	37	6	2	46	8	3	103	6	6
55-59	36	8	2	61	11	4	71	12	4	168	10	10
60-64	83	17	5	118	20	7	130	22	8	331	20	20
65-69	158	33	10	186	32	11	181	30	11	525	32	32
70-74	153	32	9	163	28	10	144	24	9	460	28	28
75	29	6	2	17	3	1	26	4	1	72	4	4
Total	479	100	29	582	100	35	598	100	36	1659	100	100

TABLE 4

CITIES REPRESENTED AND NUMBER OF CHILDREN IN SPECIAL CLASS POPULATION SAMPLE

City by Code	Number in Population Sample	City by Code	Number in Population Sample
001	43	034	15
002	9	035	28
003	6	036	27
004	2	037	4
005	21	038	15
006	8	039	30
007	6	040	5
008	35	041	5
009	121	042	1
010	6	043	10
011	481	044	1
012	6	045	6
013	81	046	5
014	14	047	5
015	100	048	1
016	9	049	1
017	4	050	18
018	6	051	18
019	18	052	14
020	19	053	2
021	4	054	10
022	6	055	191
023	15	056	2
024	8	057	66
025	31	058	20
026	17	059	7
027	2	060	2
028	1	061	1
029	6	062	4
030	7	063	2
031	6	064	9
032	28	065	2
033	6		
Total	1132		527
Grand Total			1659

TABLE 5

CITIES WITH SPECIAL CLASS POPULATIONS SHOWING NUMBER AVAILABLE, NUMBER LOST, AND NUMBER REPRESENTED IN STUDY

Total number of cities available with special class populations	65
Number of cities lost with recheck of original data	19
Cities represented by original random sample	22
Cities lost from original random sample	7
Cities represented after first random sample	16
Cities lost from first random sample	6
Cities represented after second random sample	17
Cities lost from second random sample	5
Cities represented after third random sample	16
Cities lost from third random sample	3
Cities represented after fourth random sample	16
Cities lost from fourth random sample	0
Total number of cities with special class populations represented in a study	16

TABLE 6

RANDOM SAMPLING OF CITIES WITH SPECIAL CLASSES SHOWING NUMBER OF CASES AVAILABLE, NUMBER OF CASES REPRESENTED IN SPECIAL CLASS GROUP, AND NUMBER OF CASES LOST

NUMBER

CITY	Number of Cases Available	Original Random Sample	Original Random Sample Lost	First Random Sample	First Random Sample Lost	Second Random Sample	Second Random Sample Lost	Third Random Sample	Third Random Sample Lost	Fourth Random Sample	Total Random Sampling Lost	Cases Actually Tested	Remaining Cases Available
001	42	6	1	3	2	1	1	1	1		5	6	31
002	9	2	1	1		1					1	3	5
005	19	4	4	2		1		1		1	4	5	10
008	35	3	1	2							1	4	30
009	121	10	5	3	1	2	5	3	2	2	13	7	101
010	6	1										1	5
011	481	36	8	10	4	2	4				16	32	433
012	6	2	2								2		4
013	81	8	4	6				1			4	11	66
014	14	2										2	12
015	94	10	6	3			2	2	3	3	11	7	76
019	14	2	1	1		1		1			1	4	9
020	11	1					1	2			1	2	8
022	6	1	1								1		5
025	31	2	2								2		29
032	28	1	1	1	1						2		26
038	10	1										1	9
039	30	1	1	1	1						2		28
040	3	1										1	2
108	2	1	1								1		1
055	191	4	4	10				2			4	12	175
058	8	1	1	1		1					1	2	5
TOTAL 22	1242	100	44	44	9	9	13	13	6	6	72	100	1070

TABLE 7

DISTRIBUTION OF SPECIAL CLASS GROUP BY AGE, SEX, AND IQ

IQ GROUP	CHRONOLOGICAL AGE 12 Males	12 Females	13 Males	13 Females	14 Males	14 Females	TOTAL
50-54 (0)		1	1	1	1	2	6
55-59 (1)	1	1	3	1	4		10
60-64 (2)	3	2	2	5	4	4	20
65-69 (3)	4	6	9	2	9	2	32
70-74 (4)	8	1	6	4	6	3	28
75 (5)	2		1		1		4
Total	18	11	22	13	25	11	100

65 males 35 females
Ratio - 1.86 males to 1.0 females

letters were again written to request information as to whether or not the child had been in a special class in this school system for the past two consecutive years, whether it was or was not probable that he would be in school during the 1957-58 academic year, and whether or not the child's birthdate and his IQ score were in accord with the information obtained from the State Department files. Affirmative replies to all of these questions meant that the child could then become a member of the group which was to be identified as the Special Class Group of the study. Negative replies required that another random selection of names be made and that the aforementioned procedures again be followed. Table 8 shows the total number of cases drawn, and the reasons for losses in the Special Class Group.

Identification of Regular Class Population

In order to identify the cases which would represent the regular class population of the study, use was made of a geographical division of the State of Ohio obtained from Wright (37), as shown in the Appendix, Figure 1. It had been observed that by chance the random sampling which selected the Special Class Group had produced representation from each of the five regions utilized by Wright. For this reason, use of the same geographical regions in selecting the Regular Class Group would compensate for variable climatic and socio-economic conditions in different parts of the State. A listing was thus made for each of the five regions, showing, along with their population, those cities which afforded no special class placement for children who might score low on intelligence tests. In addition, since the preponderance of special class children had been found in the largest cities in their area, the ten largest cities on each regional listing were now identified and the first three of them were selected to provide the members of the Regular Class Group.

TABLE 8

IDENTIFICATION OF RANDOM SAMPLING LOSSES FOR SPECIAL CLASS GROUP

CITY	ORIGINAL RANDOM SAMPLE LOSS					FIRST RANDOM SAMPLE LOSS					SECOND RANDOM SAMPLE LOSS					THIRD RANDOM SAMPLE LOSS					TOTAL RANDOM SAMPLE LOSS					TOTAL NUMBER LOST AS SHOWN BY CITY
	Absent Officially from School	Error in C. A.	Error in IQ	Moved Away	Years in Special Class	Absent Officially from School	Error in C. A.	Error in IQ	Moved Away	Years in Special Class	Absent Officially from School	Error in C. A.	Error in IQ	Moved Away	Years in Special Class	Absent Officially from School	Error in C. A.	Error in IQ	Moved Away	Years in Special Class	Absent Officially from School	Error in C. A.	Error in IQ	Moved Away	Years in Special Class	
001	1									2					1			1			1		1		3	5
002					1																				1	1
005	1		1		2																1		1		2	4
008					1																				1	1
009			1		4				1					4	1				2				1	7	5	13
011	1	1		4	2				4		1			2	1						2	1		10	3	16
012					2																				2	2
013			1		3																		1		3	4
015				3	3									1	1				3					7	4	11
019					1																				1	1
020														1										1		1
022				1																				1		1
025				1	1																			1	1	2
032				1			1															1		1		2
039				1					1															2		2
108				1																				1		1
055			1	2	1																		1	2	1	4
058				.1																				1		1
Total 18	3	1	4	15	21		1		6	2	1			8	4			1	5		4	2	5	34	27	72

As soon as the cities had been chosen an initial contact letter was sent to each Superintendent (Appendix, Exhibit 3) its purpose being to explain the study briefly and to request a personal conference. Affirmative replies were followed by personal interviews, at which time detailed information was given and permission to use cases in the school system was requested. In every instance the Superintendents granted the requests made and indicated interest in and enthusiasm about having their schools participate. Children obtained from these sources were henceforth to be regarded as the regular class population of the study.

In the majority of instances the schools selected did not have individual intelligence test scores available; therefore some technique for identification of potential Regular Class Group members was necessary. Since group test scores were available it was proposed that each child scoring below 80 IQ points would be screened to determine which children could meet the criteria set by the study.

Table 9 lists the cities and shows the number of children in each who scored below 80 IQ points on a group test. In certain instances no group tests were available. This table shows that code cities 507, 513, and 520 afforded no recorded data in this area. For these cities, therefore, children were screened who had been identified by members of the administration and/or faculty as mentally retarded. The screening of children who appeared to meet the criteria was accomplished by using three items from the Stanford Revision of the Binet Scale - Form L: the vocabulary, the paper-cutting and the memory-for-designs sections. These items were selected for screening purposes because they would yield measures of both a verbal and a performance nature. Furthermore each of these items is presented at different age levels of difficulty. A child of chronological years ranging from 12.0 thru 14.11 who

TABLE 9

NUMBER OF REGULAR CLASS CHILDREN SCORING BELOW 80 IQ POINTS ON GROUP TESTS, SHOWN BY CITY

City	Group Test										Total
				Otis							
	California Mental Maturity	California Mental Maturity Short Form	Henmon Nelson	Alpha	Beta	Pitner Patterson	Science Research Associates	Type of Test Used Not Identified	No Group Test Score Available	Binet Score Available	
501			63								63
502										1	1
503			61							3	64
504				4	18						22
505										1	1
506										2	2
507									20		20
508	22										22
509										1	1
510	32										32
511	25	8									33
512	35										35
513			45	1		1	1		1	3	52
514							27				27
515	33										33
516										21	21
517										1	1
518								9			9
519										3	3
520	47						2		3	9	61
521			6								6
Total 21	194	8	175	5	18	1	30	9	24	45	509

successfully completed each at his appropriate age level would presumably score on the total scale beyond the upper limits identified as one criterion of the study. Children unable to pass any one or all of these items were then given the entire Binet scale. If the child's IQ score fell within the range used and met the other criteria of the study, he qualified as a member of the Regular Class Group and the complete battery of tests was then administered.

In situations where it appeared that the child's success on the screening items might have been a chance affair, the short-form of the Binet was given to ascertain in more precise manner whether or not he could be retained as a member of the Regular Class Group. In securing the 94 Regular Class Group members a total of 464 children were thus screened. Data presented in Table 10 present reasons for exclusion from the study. (The discrepancy between the total number of children available and the number actually screened was due to absences from school.)

Finally, the material shown in Table 11 identifies by age, sex, and IQ the distribution of the 94 members of the Regular Class Group of the study.

Identification of and Reasons for Materials in the Test Battery: Psychological Tests

In order to answer the question as to whether or not measurable differences do exist between children placed in special classes and those placed in regular classes, a battery of psychological tests was individually administered to each member of both groups. Included in the battery were the Ammons Picture Vocabulary Test, the Goldstein-Scheerer Stick Test, the Good-enough Draw-A-Man Test, the Kent Emergency Scales A and D, the Raven's Coloured Progressive Matrices, the Stanford Achievement Test, two items from the Wechsler Intelligence Scale for Children, and 30 (23) select items from the California Test of Personality.

TABLE 10

LIST OF CITIES WITH REGULAR CLASSES SHOWING NUMBER OF CHILDREN SCREENED, NUMBER SCORING TOO LOW, NUMBER SCORING TOO HIGH, NUMBER QUALIFYING BUT NOT NEEDED, NUMBER ABSENT, AND NUMBER USED IN STUDY

City	Number Screened	Number Too Low	Number Too High	Number Not Needed	Number Absent	Number Used in Study
501	62		51	1	1	10
502	1					1
503	53	1	44	3	11	5
504	21	1	15	2	1	3
505	1					1
506	2					2
507	20		16	2		2
508	22		15	5		2
509	1					1
510	31	1	26	1	1	3
511	32		26		1	6
512	32		27		3	5
513	49		41		3	8
514	24	1	16		3	7
515	26		24	1	7	1
516	21					21
517	1					1
518	9		7	1		1
519	3			1		2
520	55	1	39	3	6	12
521	5	1	4		1	0
Total 21	471	6	351	20	38	94

(screened 5.0 to get 1)

TABLE 11

DISTRIBUTION OF REGULAR CLASS GROUP BY AGE, SEX, AND IQ

IQ GROUP	CHRONOLOGICAL AGE 12 MALES	12 FEMALES	13 MALES	13 FEMALES	14 MALES	14 FEMALES	TOTAL
50-54 (0)		1	2		1	2	6
55-59 (1)	1	1	1	3	2	2	10
60-64 (2)	1	4	4	3	6	1	19
65-69 (3)	3	4	6	5	4	6	28
70-74 (4)	7	2	5	4	4	5	27
75 (5)	2			1	1		4
Total	14	12	18	16	18	16	94

50 males   44 females
Ratio - 1.14 males to 1.0 females

The Ammons Full Range Picture Vocabulary Test, Form A, a brief test of language recognition requiring no verbal expression from the child, was used to identify the individual's level of language. Since the aspect of intelligence here tested is dependent upon and modifiable by the educational environment, the Ammons Test would provide information directly relevant to the purposes of differentiation between special and regular classes. In addition, it would afford knowledge of the child's ability for abstraction.

The Goldstein-Scheerer Stick Test, a performance test, was used to obtain a measure of the child's visual-motor coordination and perception. This test could further reveal whether or not the individual made frequent use of trial-and-error behavior in the solution of a problem.

The Goodenough Draw-A-Man Test, a measure of the child's visual-motor expression, was used to demonstrate motor performance as related to intelligence. This test had the further advantage of affording information about the child's perception of himself as related to his perception of others.

Scales A and D of the Kent E-G-Y Test, a simple and informal mental test designed as a preliminary measure to a more complete clinical evaluation, were used to furnish comparative data with the Stanford-Binet results. The A and D scales were selected to yield an uninterrupted sequence of scores. Comparison between these two scales may indicate further whether or not differences exist between the two groups.

The Raven's Coloured Progressive Matrices, a visual perception test which required the individual to point to the choice he considered to be correct, was used to assess the individual's ability to reason by analogy and to perform closure.

Two forms of the Stanford Achievement Test, the Primary Form AA and the Elementary Form AA, were used to measure the skills, understanding, and knowledge that resulted from the child's educative experience. The decision as to which one of the two scales was to be administered was determined on the basis of whether or not the child could read. The non-reading child, in every case, was given the Primary Form of the test. A child who could read was given the Elementary Form of the test but with the "Language" section omitted. This was done so that comparison between similar subtests on each Form could later be made. Table 12 identifies the form of the test used and presents the distribution for each group by age and IQ.

TABLE 12

DISTRIBUTION OF SPECIAL CLASS AND REGULAR CLASS GROUP CHILDREN BY AGE AND IQ GIVEN THE PRIMARY OR ELEMENTARY FORM OF THE STANFORD ACHIEVEMENT TEST

IQ GROUP	CHRONOLOGICAL AGE											
	12				13				14			
	Special Class Gp.		Regular Class Gp.		Special Class Gp.		Regular C Class Gp.		Special Class Gp.		Regular Class Gp.	
	*P	*E	P	E	P	E	P	E	P	E	P	E
50 - 54	1	0	0	1	1	1	1	1	2	1	2	1
55 - 59	2	0	2	0	3	1	1	3	3	1	1	3
60 - 64	3	2	2	3	4	4	3	4	2	6	5	2
65 - 69	5	5	3	4	4	6	7	4	3	8	3	7
70 - 74	5	4	5	4	1	9	1	8	4	5	4	5
75	1	1	1	1	1	0	0	1	1	0	1	0
Total	17	12	13	13	14	21	13	21	15	21	16	18

Primary Form
Special Class Total 46
Regular Class Total 42

Elementary Form
Special Class Total 54
Regular Class Total 52

* P = Primary Form   E = Elementary Form

Two performance items from the Wechsler Intelligence Scale for Children were included in the battery. The Coding test, a measure of visual-motor adequacy, was used to demonstrate the child's ability to make use of concrete symbolism. The Block Design test, a measure of perceptual motor ability, was used to assess the child's orientation to a design and to develop a pattern in space.

From the California Test of Personality - Intermediate Form a personality evaluation of each child was made by using 30 select items. These included items from the areas of (1) Sense of Personal Worth, (2) Sense of Belonging, (3) Withdrawing Tendencies, and (4) School Relations. Selection was based on a pilot study done in the Division of Special Education, Bureau of Educational Research and Service of The Ohio State University, which showed each of these items to be statistically significant in differentiating between children in special classes who were considered as showing poor adjustment.

Since the complete test battery required approximately four hours to administer, it was deemed necessary to present the materials in a prescribed manner and in two or more sessions in an attempt to minimize fatigue factors. The order for administering the battery is shown in Table 13.

Identification of and Reasons for Materials Included in the Test Battery: Additional Materials

Since behavioral data in addition to that obtained from the tests themselves was considered necessary, a number of forms were developed and used (See Appendix, Exhibits 4, 5). One such form, called the "Identifying Data Sheet," was for the purpose of obtaining information about the child's family and of identifying any obvious or recorded physical defects or handicaps that he might have. Most of these data were obtained from the school files. In some instances it was necessary to obtain the information from the child himself.

TABLE 13

SUGGESTED ORDER FOR PRESENTING TEST BATTERY

Sequential Order	Name of Test	* Type of Test	Estimated Time
1.	Ammons Full-Range Picture Vocabulary Test	V	15'
2.	Goldstein-Scheerer Stick Test	P	35' - 75'
3.	Stanford Achievement Test Primary Form - (Paragraph meaning; Word meaning; Spelling; Arithmetic reasoning) or Elementary Form - (Paragraph meaning)	V V	30' 25'
4.	Goodenough Draw-A-Man Test	P	10'
5.	Stanford Achievement Test Elementary Form - Word meaning and Spelling	V	8' - 10'
6.	Kent E-G-Y Scales A and D	V	10'
7.	Raven's Coloured Progressive Matrices Sets A, A_b, B	P	15'
8.	Stanford Achievement Test Elementary Form - Arithmetic reasoning	V	17' - 30'
9.	California Test Personality - 30 select items	V	5'
10.	WISC - Coding Sub-Test -- Block Design Sub-Test	P	2' - 5'
11.	Stanford Achievement Test Primary Form - Arithmetic computation Elementary Form - Arithmetic computation	V	15' - 25'

* Predominantly verbal or performance.

The "Interview Data Sheet" was devised for the purpose of obtaining information about the kinds of activities the child liked, how he spent his leisure time, and his feelings toward adults.

Since it was not possible to have personal interviews with each child's teacher, two additional forms were developed that would give information regarding the teacher's feelings toward the youngster. The "Teacher Check List" furnished information about the child's level of functioning and the "Teacher Questionnaire" identified the child's desirable and undesirable traits and the academic difficulties which he might be expected to encounter in his educative experience.

A sheet labeled "Examiner's Comments" was made available in each child's folder for the purpose of including any information pertinent but not elsewhere provided for.

Chapter III. ANALYSES AND INTERPRETATIONS

General Results

Since the various materials included in the test battery were chosen for their pertinence to the five hypotheses of the study, it was hoped that statistical analysis and interpretation of these materials would provide direct evidence testing the validity of the hypotheses. The major portion of this chapter, therefore, will present detailed statistical analysis of the tests and other materials to show that they do actually provide significant data for this purpose.

An additional statistical service lay in the testing of some of the assumptions of the study itself. An important assumption, for example, is that the Special Class and the Regular Class Groups have been adequately matched on the basis of IQ and C.A. Analysis showed that mean scores calculated from the administration of the Stanford Binet Form L were 65.86 for the Special Class Group and 65.53 for the Regular Class Group with standard deviations of 6.14 and 6.33 respectively. The means based on C.A. were found to be 13.07 for the Special Class Group and 13.09 for the Regular Class Group with standard deviations of 0.81 and 0.80. These figures indicate that no statistically significant differences existed between the two groups in terms of IQ scores and C.A. and thus verified the assumption.

Table 14 shows means and standard deviations obtained from the total scores of all the tests included in the battery. Table 15 shows the adjusted mean differences between the Special Class and Regular Class Groups for total scores for all tests used in the battery.

TABLE 14

MEANS AND STANDARD DEVIATIONS OBTAINED ON TOTAL TEST SCORES FOR THE GROUPS

Variable	Special Class Group N = 100		Regular Class Group N = 94	
	Mean	Standard Deviation	Mean	Standard Deviation
IQ	65.86	6.14	65.53	6.33
C. A.	13.07	0.81	13.09	0.80
Ammons Picture Vocabulary Test	38.39	8.14	37.04	7.65
30 Select Items From California Test of Personality	17.34	5.26	15.51	5.07
Goldstein-Scheerer Stick Test	9.69	11.36	10.66	14.07
Goodenough Draw-A-Man Test-Raw Score	20.20	8.46	23.59	7.73
Goodenough Draw-A-Man Test - Total Score	9.57	2.01	8.96	1.91
Kent E-G-Y Scale D	13.45	4.76	12.53	4.56
Kent E-G-Y Scale A	49.28	4.28	48.28	3.94
Raven's Coloured Progressive Matrices	19.29	4.69	17.82	5.21
Stanford Achievement Test	2.66	0.84	3.08	1.08
WISC Block Design Sub-test	11.11	7.06	8.56	5.48
WISC Coding Sub-test	33.36	10.46	37.27	10.55

TABLE 15

*ADJUSTED MEAN DIFFERENCES FOR TOTAL TEST SCORE OBTAINED FOR THE GROUPS SHOWING LEVELS OF STATISTICALLY SIGNIFICANT DIFFERENCES

Name of Test Used	Regression Coefficient for Groups	Level of Statistical Significance
Ammons Picture Vocabulary Test	- 1.22	
30 Select Items from California Test of Personality	- 1.81	5%
Goldstein-Scheerer Stick Test	0.78	
Goodenough Draw-A-Man **Raw Score	- 2.58	5%
Goodenough Draw-A-Man **Total Score	- 0.60	5%
Kent E-G-Y Scale D	- 0.86	
Kent E-G-Y Scale A	- 0.94	
Raven's Couloured Progressive Matrices	- 1.42	5%
Stanford Achievement Test	0.43	1%
WISC Block Designs Sub-Test	- 2.50	1%
WISC Coding Sub-Test	3.96	1%

* The primary question to be answered is whether or not the groups differ on the "y" that is the test scores with adjustments for their possible differences in IQ and C.A. To this end equations of the following type were investigated:

$$y = \overset{\text{(IQ)}}{c_1 x_1} + \overset{\text{(CA)}}{c_2 x_2} + \overset{\text{(Group)}}{c_3 x_3} + \overset{\text{(Combined Group)}}{c_4}$$

Differences between the groups independent of x_1 (IQ) and x_2 (C.A.) will be shown by a large coefficient c_3 of the group variable. The significance of c_3 is determined by a conventional "t" test. A negative coefficient indicates that an increase in that variable is associated with a decrease in the "y" variable. For the group variable x_3 a positive (and significant) coefficient indicates that the Regular Class group scored higher on that "y" than did the Special Class Group. A negative coefficient here indicates that the Special Class Group scored higher than the Regular Class Group on that "y".

** Both raw score and total score figures were obtained for the Goodenough Draw-A-Man Test.

Examination of Hypotheses

Hypothesis 1: That scores obtained from the use of various psychological instruments will reveal no statistically significant differences to exist between the two groups of mentally retarded children in academic learning or total behavioral adjustment which can be attributed to the type of educational placement.

Instruments Used and Their Pertinence to the Hypothesis

All of the psychological tests in the battery were specifically chosen for their relevance to the first hypothesis. Through a combination of intelligence, perception, achievement, projection, and personality tests the battery attempted to discover whether or not a consistent pattern of results could be shown to exist in terms of academic learning and total behavioral adjustment.

Detailed Analyses of Tests

When the group means for the various tests had been adjusted for IQ and C.A., certain of the psychological instruments used showed no group differences to exist between Special and Regular classes. Ammons Picture Vocabulary Test, Goldstein-Scheerer Stick Test, and both scales A and D of the Kent E-G-Y identified no statistically significant differences between the two groups. Mean scores on the Ammons were 38.39 for the Special Class Group and 37.04 for the Regular Class Group, with standard deviations of 8.14 and 7.65 respectively; Goldstein-Scheerer Stick Test 9.69 and 10.66 for these groups with standard deviations of 11.36 and 14.07; Kent E-G-Y "A Scale" 49.28 and 48.28 with standard deviations of 4.76 and 4.56; Kent E-G-Y "D Scale" 13.45 and 12.53 with standard deviations of 4.76 and 4.56.

The remainder of the tests used, however, established the existence of significant differences. Some of these favored the Special Class, some the

Regular Class Group. Analysis of the scores obtained on the California Test of Personality, Goodenough Draw-A-Man Test, raw and total scores, Raven's Coloured Progressive Matrices, and the Block Design sub-test of the WISC revelaed statistically significant differences between the groups. In these tests members of the Special Class Group had higher scores than those of the Regular Class Group. The Stanford Achievement Test, and the Coding Sub-test of the WISC also showed statistically significant differences between the groups. In these tests, however, the members of the Regular Class Group scored higher than did members of the Special Class Group.

For those tests which produced significant group differences and which had component parts, means and standard deviations were computed for each of the parts as presented in Table 16. The adjusted mean differences found for the component parts of these tests are shown in Table 17. From this table it is apparent that with the California Test of Personality the component part "Sense of Personal Worth" was the only section that showed statistically significant differences between the groups, a difference favoring the Special Class Group. In the case of the Raven's Coloured Progressive Matrices test, the only component part that showed a significant group difference was the "Scale A_b." The difference between the groups in this instance again favors the members of the Special Class.

Computations for the component parts of the Stanford Achievement Tests revealed statistically significant differences between the groups for each section. In these tests, however, the performance of members of the Regular Class Group is significantly higher than that of the Special Class Group. Since two forms of the Stanford Achievement Test were administered, it is informative to note again the data presented earlier in Table 12 on page 29 which indicated the IQ and C.A. distribution of the groups pertinent to the form of the test administered.

TABLE 16

MEANS AND STANDARD DEVIATIONS OBTAINED ON COMPONENT PART TEST SCORES FOR THE GROUPS

Test	Component Part	Special Class Group N = 100		Regular Class Group N = 94	
		Mean	Standard Deviation	Mean	Standard Deviation
30 Select Items from California Test of Personality	Sense of Personal Worth	4.00	1.46	3.48	1.43
	Sense of Belonging	2.29	1.06	2.05	1.20
	Withdrawing Tendencies	6.61	2.85	5.82	2.76
	School Relations	4.44	1.60	4.16	1.62
Raven's Coloured Progressive Matrices	Scale A	8.09	1.70	7.84	2.06
	Scale A_b	6.46	2.38	5.67	2.53
	Scale B	4.74	1.72	4.31	1.63
Stanford Achievement Test	Paragraph Meaning	2.29	0.98	2.68	1.14
	Word Meaning	2.42	1.02	2.86	1.15
	Spelling	2.58	1.10	3.21	1.66
	Arithmetic Reasoning	2.64	0.98	3.04	1.04
	Arithmetic Computation	3.29	0.88	3.60	1.15

TABLE 17

ADJUSTED MEAN DIFFERENCES FOR COMPONENT PART TEST SCORES OBTAINED FOR THE GROUPS SHOWING LEVELS OF STATISTICALLY SIGNIFICANT DIFFERENCES

Test	Component Part	Regression Coefficient for Component Part Score for Groups	Level of Statistical Significance
California Test of Personality 30 Select Items	Sense of Personal Worth	- 0.53	5%
	Sense of Belonging	- 0.23	
	Withdrawing Tendencies	- 0.77	
	School Relations	- 0.28	
Raven's Coloured Progressive Matrices	Scale A	- 0.23	
	Scale A_b	- 0.77	5%
	Scale B	- 0.42	
Stanford Achievement Test	Paragraph Meaning	0.40	1%
	Word Meaning	0.45	5%
	Spelling	0.63	1%
	Arithmetic Reasoning	0.40	1%
	Arithmetic Computation	0.32	5%

Examination of the data for each psychological test, along with statistical analysis, shows in greater detail the grounds upon which these general observations have been based and likewise provides materials for other more specific observations.

Tests Showing No Group Differences

Ammons Full-Range Picture Vocabulary Test

No significant difference in vocabulary development between the two groups was obtained. Comparison of their ability to form the correct association between the oral word and its illustration did not permit significant differentiations to be made between the children in the groups studied. The trend obtained, though insignificant, was in the direction of favoring the members of the Special Class Group.

Goldstein-Scheerer Stick Test

The results obtained from the analysis of this test did not yield significant differences between the two groups. While the trend tended to favor the members of the Regular Class Group, it was so slight as to be negligible. The children of the two groups demonstrated little difference in their visual-motor coordination and perception and the use of trial-and-error behavior in the solution of a problem.

Kent E-G-Y Scales A and D

The results obtained from these scales revealed no statistically significant differences to exist between the two groups. The trends identified, though slight, tend to favor the Special Class Group members.

30 Select Items from the California Test of Personality

Since the California Test of Personality purportedly can identify factors in the personality and social adjustment of the individual, the statistically significant differences obtained on the total score favoring the Special Class Group are important. On the basis of the 30 select items which represent the areas of "Sense of Personal Worth," "Sense of Belonging," "Withdrawing Tendencies," and "School Relations" the somewhat more adequate personal and social adjustment of this group is indicated. The members of the Special Class Group manifest to a somewhat greater degree feelings of competency, hope for future success, enjoyment of cordial relationships with family and friends, and interest and acceptance in the school environment. In addition, they do not show tendencies to substitute fantasy for reality.

Although scores for each of the areas used were in the direction of favoring the Special Class Group, the sub-group "Sense of Personal Worth" was the one which indicated the greatest degree of statistical significance. Presumably, the children selected (by whatever criteria) for special class placement are not penalized in terms of personal adjustment because of separation from their "intellectually more adequate peers." Such interpretation appears justifiable even though few items from the personality scale were used, for the authors of the test indicate that consideration is given to the use of specific items within each sectional or total score ". . . to detect the areas and specific types of tendencies to think, feel, and act which reveal undesirable individual adjustments." (30)

Goodenough Draw-A-Man Test

The "Draw-A-Man Test" is a non-verbal instrument which yields not only a mental age score but also permits of certain clinical interpretations. The drawing manifests the child's reactions and feelings not only about himself, but also about others in his environment. The differences that were obtained between the two groups with this instrument are therefore informative. The feelings and reactions of the members of the Special Class Group toward self and others presumably are more adequate than those manifested by members of the Regular Class Group. When this test is viewed along with the results obtained from the California Test of Personality, it presents the picture of the Special Class Group child as generally a more adequate personality in terms of his self-acceptance and in terms of his relationships and acceptance of others.

Raven's Coloured Progressive Matrices

As stated by the author of the Coloured Progressive Matrices Test, in no way is this instrument to be considered as being ". . . . . a test of general mental deficiency as legally defined. It indicates clearly whether a person is, or is not, capable of forming comparisons and reasoning by analogy; and, if not, to what extent, relative to other people, he is capable of organizing spatial perceptions into systematically related wholes." (24)

While each of the three scales of this test described as " . . . . a test of observation and clear thinking" (24) was in the direction of favoring the Special Class Group, the only scale to show statistically significant differences between the two groups was Scale A_b. The differences obtained from this scale, which was specifically designed to assess the individual's ability to recognize discrete entities as parts of the organized "whole," implies that the Special Class Group children have somewhat better orientation and perception than do members of the Regular Class Group.

Wechsler Intelligence Scale for Children - Block Design Sub-test

The significant differences obtained between the two groups on the WISC Block Design sub-test is of interest. On this test of visual-motor coordination the members of the Special Class Group show the more adequate performance. This implies that the Special Class Group children are better in their visual organization of materials than are the members of the Regular Class Group. Since it is a common practice in the special class setting to encourage the child to express himself by manipulation of materials in various media, the advantage of such opportunity should not be discounted.

Tests Favoring the Regular Class Group

Stanford Achievement Test

The common function of the Stanford Achievement Test is the appraisal of the individual's learning, but it has the further advantage of being useful in a predictive sense. The significant differences obtained favoring the Regular Class Group indicate that in terms of academic materials they perform more adequately than do the members of the Special Class Group. Placement of the mentally retarded child in a regular classroom presumably means that greater emphasis is placed upon the individual's acquiring competency in reading, spelling, and arithmetic. Differences in the two types of academic settings, as indicated by the results obtained from the various psychological instruments and other materials used picture the special classroom as being the more concerned with the overall personal development and growth of the child but lowest in the academic areas which are commonly developed within an educational framework.

Wechsler Intelligence Scale for Children Coding sub-test

The differences obtained on the Coding test of the Wechsler Intelligence Scale for Children show a more adequate performance by the members of the Regular Class Group. The results of this visual-motor test, which involves concentration and persistent effort, seem especially relevant to the child's reading ability and are therefore quite compatible with the results obtained by the use of an achievement test which requires such skill.

Conclusions

Six of the nine tests administered showed some type of statistically significant differences to exist between Regular Class and Special Class children.

(a) Stanford Achievement Test. Differences at the .01 level of statistical significance were found favoring the Regular Class Group.

(b) WISC Coding Sub-Test. Differences at the .01 level of statistical significance were found favoring the Regular Class Group.

(c) WISC Block Design Sub-Test. Differences at the .01 level of statistical significance were found favoring the Special Class Group.

(d) California Test of Personality - 30 select items. Differences at the .05 level of statistical significance were found favoring the Special Class Group.

(e) Goodenough Draw-A-Man Test. Differences on both raw score and total score figures obtained were at the .05 level of statistical significance favoring the Special Class Group.

(f) Raven's Coloured Progressive Matrices. Differences at the .05 level of statistical significance were found favoring the Special Class Group.

The three remaining tests showed no statistically significant differences in the areas tested. Two of these, however, were in the direction of favoring one of the two groups.

(g) Goldstein-Scheerer Stick Test. No statistically significant differences were revealed between the two groups. Scores obtained were in the direction of favoring the Regular Class Group.

(h) Ammons Picture Vocabulary Test, Kent E-G-Y Scales D and A. No statistically significant differences were revealed between the two groups. Scores obtained were in the direction of favoring the Special Class Group.

Conclusion: Hypothesis 1 is not tenable.

Hypothesis 2: That within this range the specific level of tested intellectual functioning of the mentally retarded child has no effect on his learning and adjustment in either type of educational setting.

Structuring of the Data to Test the Hypothesis

When special programs for educable retarded children are established by schools, a range of IQ scores between 50-75 points is commonly used as one of the placement criteria. Since an IQ range of 25 points is fairly wide and thus indicative of many individual differences among the subjects involved, it seemed desirable to determine differences resulting from the relationship between an individual's IQ score and the group of which he was a member. A method was therefore devised to detect whether children at the lowest level of ability in the 50-75 range would show marked differences from the children in their group who were in the middle or upper IQ ranges. Following the verification of differences within each of the groups, it would then be necessary to ascertain whether differences existed between the two groups.

First the 50-75 range was divided into three IQ intervals. All children in the Special Class Group who had individual IQ scores between 50 through 59 points were considered to be in sub group A; those from 60 through 69 in sub group B; and those from 70 through 75 in sub group C. Members of the Regular Class Group were similarly assigned to sub groups X, Y, or Z according to their individual IQ scores. Table 7 and 11 indicate the numbers of children in each of these sub groups. Finally, in order to determine the existence and extent of differences, "t" tests were applied to the scores obtained from the psychological tests administered to both groups.

Analysis According to IQ Intervals 50-59, 60-69, 70-75

Analysis of the data resulting from this procedure disclosed differences based on IQ level both within and between groups.

Table 18 demonstrates the variance of individual scores within each group on the psychological tests. Among the Regular Class members, differences of statistical significance occur on three tests. A striking variability, however, marks the scores of the Special Class Group who present significant differences in nine out of eleven scores.

Table 19 makes comparisons between sub groups A and X, B and Y, and C and Z. Interesting comparison can be made between the differences here recorded and those noted on Table 18, page 46 when the entire IQ range within the Special Class and Regular Class Groups was used.

Data appearing in Table 19 indicate that on five tests each sub group performed in the same manner as did the total group. This would indicate that on the Stanford Achievement Test children in the Regular Class Group at all three IQ levels performed in a superior manner to those in the Special Class Group. This is also true of the performance on the WISC Coding Sub-Test. On the basis of performance on the California Test of Personality, children in the Special Class Group at all IQ levels appear to have the potential for better classroom adjustment. This trend is also true for this group on the WISC Block Design Sub-Test and the Kent Scale A.

On all the remaining tests, however, the general trends established when the entire IQ range was analyzed are reversed by some one or other of the sub groups. The sub group responsible for most of the reversals of general trends is "A" (50-59 IQ Special Class Group). On four tests, the Goodenough Draw-A-Man raw and total scores, Kent Scale D, and Raven's, this group performed more poorly than the other sub groups of the Special Class Group. Sub group B (60-69 IQ Special Class Group) performed more poorly than the remainder of the Special Class Group on one test, the Ammons. Sub group C performed better than the trend for the total Special Class Group on the Goldstein-Scheerer Stick Test.

TABLE 18

ONE WAY ANALYSIS OF VARIANCE BASED ON IQ INTERVALS 50-59, 60-69, AND 70-75 WITHIN THE SPECIAL CLASS GROUP AND WITHIN THE REGULAR CLASS GROUP

TYPE OF TEST	F	
	SPECIAL CLASS GROUP	REGULAR CLASS GROUP
Ammons Picture Vocabulary Test	7.47**	5.83**
30 Select Items from California Test of Personality	.15	.80
Goldstein-Scheerer Stick Test	3.24*	5.68**
Goodenough Draw-A-Man Test Raw Score	4.09*	.35
Goodenough Draw-A-Man Test Total Score	4.26*	.34
Kent E-G-Y Scale D	6.18**	2.37
Kent E-G-Y Scale A	7.74**	9.46**
Raven's Coloured Progressive Matrices	11.50**	.78
Stanford Achievement Test	6.18**	2.19
WISC Block Design Sub-test	2.46	.08
WISC Coding Sub-test	6.68**	.11

* Significant at .05 level of confidence

** Significant at .01 level of confidence

TABLE 19

THE t[1] TEST OF SIGNIFICANCE BETWEEN THE IQ LEVELS OF THE SPECIAL CLASS GROUP AND THE REGULAR CLASS GROUP

TYPE OF TEST	I Q L E V E L		
	50-59	60-69	70-75
Ammons Picture Vocabulary Test	1.04	- .20	1.93
30 Select Items from California Test of Personality	1.62	2.16*	.70
Goldstein-Scheerer Stick Test	- .77	- .15	.14
Goodenough Draw-A-Man Test - Raw Score	- 1.31	2.29*	2.25*
Goodenough Draw-A-Man Test - Total Score	- 1.27	2.22*	2.21
Kent E-G-Y Scale D	- .40	1.11	1.21
Kent E-G-Y Scale A	.74	.53	2.13*
Raven's Coloured Progressive Matrices	- .87	.95	2.90**
Stanford Achievement Test	- 4.12*	- .74	- 2.16*
WISC - Block Design Sub-test	.07	1.76	2.48*
WISC - Coding Sub-test	- 2.72*	- 1.79	- .42

* Significant at .05 level of confidence

** Significant at .01 level of confidence

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[1] t was calculated using the formula

$$t = \bar{x} - \bar{y} \frac{n_1 n_2 (n_1 + n_2 - 2)}{(n_1 + n_2)\ (s_x^2 + s_y^2)}$$

in reporting the "t" values obtained. A negative sign indicates that the members of the regular class group scored higher on that variable than did the members of the special class group.

Interpretation of these differences would seem to indicate that Special Class children in Sub group A of this study operate somewhat differently from the remainder of retarded children in the Special Class Group and also from children in Sub group X in the Regular Class Group. This fact would further seem to point to differences other than tested mental ability between the two groups of children with IQ scores from 50-59.

Among the possible explanations of this situation may be that of selective placement. Do cities without special classes exclude some of the children in this mental group because of physiological and psychological handicaps?

Conclusion: Hypothesis 2 is not tenable.

Hypothesis 3: That certain factors pertinent to the parents of the children in the two groups will not reveal statistically significant differences to exist.

Instruments Used and Their Pertinence to the Hypothesis

"The Identifying Data Sheet" was used to obtain information to make possible the acceptance or rejection of the above Hypothesis. Since certain assumptions about similarities within the same geographical areas were made about the two groups, it was felt that questions pertinent to the family background like legal and occupational status of the parents and evidence of P. T. A. membership would furnish additional data.

Detailed Analyses

Table 20 reveals that the two groups are quite dissimilar in respect to Legal Status of Parents.

TABLE 20

LEGAL STATUS OF PARENTS OF CHILDREN IN SPECIAL CLASS AND REGULAR CLASS GROUPS

GROUP	PARENTAL STATUS		*TOTAL
	Living	Other Status	
Special Class	63	34	97
Regular Class	75	16	91

X^2 = 7.334; P = < .01

Statistical analysis using X^2 (Chi Square) yielded a P of less than .01 which indicates that the two groups do differ significantly in these respects. Further detailed analysis revealed a higher percentage (11 per cent as contrasted to 4 per cent) of deaths of fathers for members of the special class group than for those of the regular class group. The proportions that were represented in categories such as "Separation" and "Divorce" showed the groups to be quite comparable.

Table 21 contains data pertinent to the work status of the parents.

TABLE 21

OCCUPATIONAL STATUS OF PARENTS OF CHILDREN IN SPECIAL CLASS AND REGULAR CLASS GROUP

GROUP	OCCUPATIONAL STATUS		**TOTAL
	One or Both Parents Work	Neither Parent Works	
Special Class	81	3	84
Regular Class	82	5	87

X^2 = 45; P = .50 < P < .70

Statistically significant differences do not appear between the two groups relatively to parental work histories, as demonstrated when X^2 technique was

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* No information available for 3 children in each group.

** For 16 Special Class and 7 Regular Class Children - nothing known of parents' work history.

applied and a P between .50 and .70 was obtained. For the Special Class children in 96 per cent of the cases, either one or both parents work; for the Regular Class children this percentage is 94. Detailed analysis revealed that more mothers of the Special Class Group children work than do those of the Regular Class children, 15 per cent as contrasted to 5 per cent. Of the total 100 cases in the Special Class Group, it was found that in 15 per cent of the cases no knowledge of the work status of either parent was known; this was true for only 5 per cent of the cases represented in the Regular Class Group.

Parental interest in the individual child's academic welfare might reasonably be assumed on the basis of membership in the Parent Teachers Association. Answers to such a question would reveal concrete evidence of such interest in the child and in the school. Table 22 gives the incidence of such membership for the two groups.

TABLE 22

PARENT TEACHER ASSOCIATION MEMBERSHIP STATUS OF PARENTS OF SPECIAL CLASS AND REGULAR CLASS GROUP CHILDREN

GROUP	P. T. A. MEMBERSHIP		*TOTAL
	Both Parents or Mother or Father a Member	Neither Parent a Member	
Special Class	17	60	77
Regular Class	19	58	77

$$X^2 = .15; \quad P = .50 < P < .70$$

Little difference is noted between the two groups in this respect. A P between .50 and .70 using X^2 was obtained. The apparent lack of interest manifested by "non-membership" on the part of parents of both groups is indeed startling.

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* No information - no record of membership status for 23 Special Class Members and 17 Regular Class Members.

Conclusions

From the foregoing analyses of the factors concerned with family background of the children involved in the study, the following conclusions are made concerning Hypothesis 3:

(a) Legal Status of Parents. Differences at the .01 level of statistical significance were found. A higher percentage of deaths of Fathers of the Special Class Group was evident.

(b) Occupational Status of Parents. No statistically significant differences were found between the parents of the two groups. A somewhat higher percentage of Mothers of the Special Class Group work.

(c) Parent Teacher Association Membership. No statistically significant differences were found between the parents of the two groups. A high percentage of non-membership was found for both groups.

Conclusion: Hypothesis 3 is not tenable.

Hypothesis 4: That certain factors in the environment of these mentally retarded children will not differentiate between the groups in a significant manner.

Instruments Used and Their Pertinence to the Hypothesis

The remaining sections of the Identifying Data Sheet and the Interview Data Sheet were used to furnish information which would reveal any environmental differences existing between the two groups of children which would make possible the acceptance or rejection of Hypothesis 4. Activities were assessed in areas related to the child's social participation in the school and community and to the impact of the school on the child. The data discussed in this section were gained by talking informally with the child himself.

Detailed Analyses

Church Attendance. When the two groups were questioned about Church attendance they again appeared similar. Data from Table 23 yielded a X^2 of

.119 with a P between .70 and .80 and indicate that the children appear to be similar in their church going habits.

TABLE 23

REGULARITY OF CHURCH ATTENDANCE OF SPECIAL CLASS AND REGULAR CLASS GROUP CHILDREN

GROUP	CHURCH ATTENDANCE		* TOTAL
	Attends	Never Attends	
Special Class	73	17	90
Regular Class	69	14	83

$X^2 = .12;\ P = .70 < P < .80$

Membership in Clubs and Organizations. A X^2 of .06 was obtained when analysis was made about membership in organized school clubs or groups. Tabulation of these data is shown in Table 24.

TABLE 24

MEMBERSHIP IN ORGANIZED SCHOOL CLUBS OR ACTIVITIES FOR SPECIAL CLASS AND REGULAR CLASS GROUP CHILDREN

GROUP	MEMBERSHIP STATUS		* TOTAL
	One or More Clubs or Groups	No Club or Group	
Special Class	12	77	89
Regular Class	10	72	82

$X^2 - .06;\ .80 < P < .90$

The P for this X^2 fell between .80 and .90 and indicates that the children in the two groups do not differ in a statistically significant manner in this respect.

Membership in organized out-of-school clubs or groups reveals that the children in the two groups do not differ in a statistically significant manner in the number of activities engaged in when away from school.

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* 10 Special Class and 11 Regular Class Members did not answer the question.

Table 25 presents these data and yields a X^2 of .01 with a P between .90 and .95. The high incidence in the "No Information" category for the members of the Regular Class Group suggests that caution be used in interpreting that "real differences" may not exist between the groups on the basis of these data. These materials suggest that the children who participated in the study are not "joiners" of either in-school or out-of-school groups.

TABLE 25

MEMBERSHIP IN ORGANIZED OUT-OF-SCHOOL CLUBS OR GROUPS FOR SPECIAL CLASS AND REGULAR CLASS GROUP CHILDREN

GROUP	MEMBERSHIP STATUS		* TOTAL
	One or More Clubs or Groups	No Club or Group	
Special Class	21	75	96
Regular Class	17	59	76

$X^2 = .01; \quad P = .90 < P < .95$

Paid Work Activities. Paid work activities engaged in by the children participating in the study is shown in Table 26. A X^2 of .06 with a P between .70 and .80 indicates that the two groups do not differ significantly in this respect. The majority of children in each group do no outside work for pay a fact which is not surprising in view of the age groups used in the study.

TABLE 26

PAID WORK ACTIVITIES ENGAGED IN BY SPECIAL CLASS AND REGULAR CLASS GROUP CHILDREN

GROUP	PAID WORK	NO WORK	**TOTAL
Special Class	8	86	94
Regular Class	7	86	93

$X^2 = .06; \quad P = .70 < P < .80$

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* No information available for 4 Special Class Members and 18 Regular Class Members.

** No information available on 6 Special Class Members and 1 Regular Class Member.

Adults Best and Least Liked. Table 27 showing data on the adult best liked by the children of the two groups yields a X^2 of .22 with a P .50 and .70.

TABLE 27

IDENTIFICATION OF THE ADULT BEST LIKED BY SPECIAL CLASS AND REGULAR CLASS GROUP CHILDREN

GROUP	FAMILY MEMBER	NON-FAMILY MEMBER	*TOTAL
Special Class	67	16	83
Regular Class	52	15	67

$X^2 = .22; \ P = .50 < P < .70$

Detailed analysis revealed that a larger proportion of special class children named their mother as the adult best liked. Further differences between the two groups were noted in relation to the special class group in the naming of an "Uncle" and of a "Male neighbor" as best-liked. When these data are related to those presented by a detailed analysis of "Legal Status," which revealed that a larger proportion of fathers of special class children are deceased, these identifications are not too surprising. A larger proportion of children in the regular class group would not answer this question.

When the groups were asked to identify the adult least-liked no meaningful statistically significant differences were noted. Analysis of data shown in Table 28 revealed a X^2 of 1.40 with a P between .20 and .30.

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*1 Form for Regular Class Member not completed.
6 Special Class and 7 Regular Class Members named "all adults."
4 Special Class and 3 Regular Class Members named "no adults."
5 Special Class and 6 Regular Class Members answered "don't know."
2 Special Class and 10 Regular Class Members would not answer the question.

TABLE 28

IDENTIFICATION OF THE ADULT LEAST LIKED BY SPECIAL CLASS AND REGULAR CLASS GROUP CHILDREN

GROUP	FAMILY MEMBER	NON-FAMILY MEMBER	*TOTAL
Special Class	17	35	52
Regular Class	15	18	33

$X^2 = 1.40$; $P = .20 < P < .30$

Best and Least Liked School Activities. Tabulation of "Best-liked School Activity" is shown in Table 29. Under the heading "Academic Subjects" were included reading, arithmetic, English, spelling, history, and science. The category labeled "Other Subjects or Activities" subsumed subjects such as: arts, crafts, home economics, shop, printing, physical education, music, health, the recess period, changing of classes, studying, and the identification of both teachers and pupils. Statistical analysis yields a X^2 of 1.33 with a P .20 and .30 which shows the two groups not to differ significantly from one another in this respect.

TABLE 29

IDENTIFICATION OF BEST-LIKED SCHOOL ACTIVITY IN SPECIAL CLASS AND REGULAR CLASS GROUP

GROUP	TYPE OF ACTIVITY		**TOTAL
	Academic Subjects	Other Subjects or Activities	
Special Class	45	51	96
Regular Class	33	53	86

$X^2 = 1.33$; $P = .20 < P < .30$

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* Form for 1 Regular Class Member not completed.
37 Special Class and 42 Regular Class Members indicated "No Adult."
3 Special Class and 6 Regular Class Members indicated "Don't know."
8 Special Class and 12 Regular Class Members gave no answer to the question.

** 4 Special Class Members and 7 Regular Class Members failed to respond.
1 Form not completed for Regular Class Member.

Tabulation of "Least-liked School Activities" presented in Table 30 reveals no statistically significant differences between the two groups as demonstrated when a X^2 of .22 with a P between .50 and .70 was obtained.

TABLE 30

IDENTIFICATION OF LEAST-LIKED SCHOOL ACTIVITY FOR SPECIAL CLASS AND REGULAR CLASS CHILDREN

GROUP	TYPE OF ACTIVITY		*TOTAL
	Academic Subjects	Other Subjects or Activities	
Special Class	42	35	77
Regular Class	34	24	58

$X^2 = .22$; $P = .50 < P < .70$

Activities Prior to School Day. Table 31 showing "Activities Engaged in Prior to the Beginning of the School Day" shows the two groups to differ only slightly in this respect.

TABLE 31

TYPES OF ACTIVITIES ENGAGED IN AT SCHOOL PRIOR TO THE BEGINNING OF THE SCHOOL DAY

GROUP	SOME ACTIVITY	NOTHING	**TOTAL
Special Class	55	33	88
Regular Class	54	18	72

$X^2 = 2.85$; $P = .05 < P < .10$

A X^2 of 2.85 with a P between the .05 and .10 level was obtained. Playground activities or assistance to the teacher in housekeeping tasks were the major things reported under the category "Some Activity." Again caution in

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* 1 Form not completed for Regular Class Member.
Question not answered by 5 Special Class and 7 Regular Class Members.
1 Special Class and 4 Regular Class Members dislike everything.
17 Special Class and 18 Regular Class Members dislike nothing.
6 Regular Class Members did not know.

** 1 Form not completed for Regular Class Member.
Question not answered by 12 Special Class Members and 21 Regular Class Members

interpreting these data is necessary because of the large proportion of children who did not answer this question. It is nonetheless meaningful, however, to note the sizable proportion of Special Class children who indicate that they do nothing during this period of time. The suggestion is therefore proposed that no types of organized activities take place or are planned for during this interval.

Conclusions

From the analysis of factors concerned with the child's social relationships and attitudes toward various school activities, the following conclusions are made concerning Hypothesis 4:

(a) Church Attendance. No statistically significant differences were found between the two groups.

(b) Membership in Organized School Clubs or Activities. No statistically significant differences were found between the two groups. Only a small percentage of children in the groups affiliated with school organizations.

(c) Membership in Organized Out-of-School Clubs or Groups. No statistically significant differences were found between the two groups. Children in the groups appear not to be joiners.

(d) Adult Best Liked. No statistically significant differences were found between the two groups. Both groups mentioned family members most often in naming the adult best liked.

(e) Adult Least Liked. No statistically significant differences were found between the two groups. Both groups mentioned persons outside the family most often in naming the adult least liked.

(f) Paid Work Activities. No statistically significant differences were found between the two groups. Very few children in either group hold paying jobs.

(g) Best Liked School Activity. No statistically significant differences were found between the two groups.

(h) Least Liked School Activity. No statistically significant differences were found between the two groups.

(i) Activities Prior to Beginning of School Day. No statistically significant differences were found between the two groups. When activities were reported they fell into play or teacher assistance areas.

Conclusion: Hypothesis 4 is tenable.

Hypothesis 5: That teachers' knowledge about and understanding of the mentally retarded child will not differ from one educational setting to another.

Instruments Used and Their Pertinence to the Hypothesis

In order to have information about differences in attitudes of teachers regarding mentally retarded children which might affect their learning and adjustment in a particular class setting, two forms were developed. One, called The Teacher Check List, furnished information concerning the child's level of functioning and the other, The Teacher Questionnaire, identified the child's desirable and undesirable traits and the academic difficulties which he might be expected to encounter in his educative experiences. A copy of these materials is presented in the Appendix, Exhibits 6, 7. Tables 32 and 33 indicate the percentage of teachers who responded.

TABLE 32

DISTRIBUTION OF COMPLETE AND PARTIAL RETURNS FOR "TEACHER CHECK LIST" AND "TEACHER QUESTIONNAIRE" FOR SPECIAL CLASS AND REGULAR CLASS GROUP

GROUP	* "TEACHER CHECK LIST"			* "TEACHER QUESTIONNAIRE"		
	Complete Returns	Partial Returns	Total Returns	Complete Returns	Partial Returns	Total Returns
Teachers of Special Class Group	99	1	100	87	13	100
Teachers of Regular Class Group	91		91	80	8	** 88

Only three teachers chose not to respond to the requests made. The material shown in Table 33 identifies the number of teachers in relation to the number or numbers of children on whom reporting was done.

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*3 Teachers of Regular Class Group elected not to respond to either of the forms.

**3 Teachers of Regular Class Group elected not to respond to the "Teacher Questionnaire".

TABLE 33

DISTRIBUTION SHOWING NUMBER OF TEACHERS OF SPECIAL CLASS AND REGULAR CLASS GROUP REPORTING ON ONE CHILD OR MORE ON "TEACHER CHECK LIST" AND "TEACHER QUESTIONNAIRE"

FORM AND GROUP	NUMBER OF TEACHERS REPORTING			
* Teacher Check List	Reporting on 1 child	Reporting on 2 children	Reporting on 3 children	Total no. reporting
Teachers of Special Class Group	61	12	5	78
Teachers of Regular Class Group	78	5	1	84
* Teacher Questionnaire				
Teachers of Special Class Group	61	12	5	78
Teachers of Regular Class Group	75	5	1	** 81

Detailed Analysis

Teacher Check List. Analysis of the Teacher Check List using the statistic X^2 reveals certain significant differences to exist between the two groups of teachers based on teacher interpretation of items.

Tabulation of item one of the check-list, as shown in Table 34, yields a X^2 of 2.89 with a P between .30 and .50. Based on teacher opinion the children in the two groups appear not to differ in a statistically significant manner from one another in their level of functioning as related to their ability.

Analysis of item two pertinent to the relationship between the child's verbal and performance ability does not indicate a statistically significant difference between the two groups. The X^2 of 7.47 yields a P between .05 and .10. Of interest, however, was the analysis of the component "a" of the item. In the case of teachers of the Special Class Group, judgments are that the child's verbal ability is better than his performance ability.

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*3 Teachers of Regular Class Group elected not to respond to either of the forms.

**3 Teachers of Regular Class Group elected not to respond to the "Teacher Questionnaire".

Difficulties of a physical nature as presented by item 3 and also shown in Table 34 reveal statistically significant differences to exist between the two groups. A X^2 of 15.68 with a P of less than .01 was obtained. The component "e" was responsible for this marked difference in the two groups. This component indicates that a larger proportion of teachers of children in the Regular Class Group either do not have enough knowledge of the youngsters to make these identifications about physical defects, or that the child's behavior is such that these difficulties, even though present, are never observed within the school setting.

The acceptance of the child by his peer group is revealed by item number 4 in Table 34. The X^2 of 27.02 gives a P less than .01.

TABLE 34

DISTRIBUTION OF "TEACHER CHECK-LIST" RESPONSES SHOWING X^2 VALUES AND PROBABILITY LEVELS

ITEM	SPECIAL CLASS GROUP	REGULAR CLASS GROUP	TOTAL	CHI SQUARE	PROBABILITY LEVEL
1-a. Child is functioning within his ability to learn	50	49	99		
b. Child is functioning a little below his ability to learn	35	27	62		
c. Very much below	11	7	18		
d. No opinion	4	8	12		
Total	100	91	191	2.89	$.30 < P < .50$
2-a. Child's verbal ability is better than his performance ability	20	8	28	4.71	$.02 < P < .05$
b. Child's performance ability is better than his verbal ability	27	20	47		
c. Child's performance ability and verbal ability are about the same	47	52	99		
d. Abilities unknown	6	11	17	2.18	$.10 < P < .20$
Total	100	91	191	7.47	$.05 < P < .10$
3-a. Child has visual difficulties	21	11	32		
b. Child has auditory difficulties	6	6	12		
c. Child has motor difficulties	20	12	32		
d. None	53	36	89		
e. Unknown	10	28	38	14.65	$P < .01$
Total	110	93	203	15.68	$P < .01$
4-a. Child is tolerated by his classmates (accepted passively)	33	59	92		
b. Child is wanted as a member of their groups	59	17	76	32.30	$P < .01$
c. Child is actively rejected (aggressively opposed, etc.)	3	1	4		
d. Child is passively rejected (avoided, etc.)	5	12	17	3.94	$.02 < P < .05$
e. No opinion	0	2	2		
Total	100	91	191	27.02	$P < .01$

TABLE 34 (Continued)

ITEM	SPECIAL CLASS GROUP	REGULAR CLASS GROUP	TOTAL	CHI SQUARE	PROBABILITY LEVEL
5-a. Child seems to like others	79	59	138		
b. Child seems indifferent toward others	11	21	32	4.89	.02 < P <.05
c. Child seems antagonistic toward others	9	8	17		
d. No opinion	0	3	3	3.48	.05 < P < .10
Total	99	91	190	8.96	.02 < P < .05
6-a. Seems afraid to take chances	20	17	37		
b. Seems afraid to make mistakes	23	29	52		
c. Seems afraid of responsibility	18	17	35		
d. Seems afraid to fail	12	8	20		
e. Seems threatened by trying to do his best	7	3	10		
f. Seems afraid of criticism	29	12	41	7.00	P <.01
g. Seems afraid to appear ridiculous	19	25	44		
h. Seems afraid of being imperfect	12	7	19		
i. Seems afraid to have fun	11	11	22		
j. Seems afraid to ask for help	17	22	39		
k. Seems afraid of not being accepted and wanted	20	17	37		
l. Seems afraid of his present low ability level of performance	12	23	35	4.15	.02 < P < .05
m. Seems afraid of not being regarded as "worth anything"	11	13	24		
n. Any other fears expressed by child in work and play	8	18	26	4.40	.02 < P < .05
o. None	23	11	34	4.12	.02 < P < .05
p. Unknown	1	1	2		
Total	243	234	477	24.99	.05 < P < .10
7-a. Child is keenly interested in school	17	1	18	14.21	P <.01
b. Child likes school	54	42	96		
c. Child is indifferent to school	18	35	53	9.66	P <.01
d. Child dislikes school	4	6	10		
e. Child dislikes school very much	2	3	5		
f. No Opinion or other comments	4	4	8		
Total *	99	**91	190	21.56	P <.01

* Discrepancy in "Total Number" for the Special Class Group is due to the fact that the "page 2" portion for one "Teacher Check List" was not submitted.

** Discrepancy in "Total Number" for Regular Class Group is due to the fact that 3 "Teacher Check Lists" were not submitted.

Further analysis of the item reveals that components "b" and "d" of the item are responsible for these statistically significant differences. A larger proportion of children in the Regular Class Group are considered by their teachers as either receiving passive acceptance by their peers, or being passively rejected.

Teacher judgments about the reaction of these children toward their peers again show a statistically significant difference between the two groups. These data are presented under item 5 of Table 34. A X^2 of 8.96 yields a P between the .02 and .05 level of significance. The answers to the components "b" and "d" appear to be responsible for this difference. Component "b" shows that a larger proportion of the Regular Class Group children are judged as being indifferent toward others. Three teachers of the Regular Class Group were unable to give any opinion as to how these children may feel toward their peers.

The sixth item of the Check-List dealt with manifest fears that the child might have. These data are also presented in Table 34 and show that the two groups do not differ in a statistically significant manner in this respect. For the X^2 of 24.99, a P less than .10 but greater than .05 was obtained. Even though the two groups appear similar, it is of interest to note the frequencies of teacher judgments in the categories, "f," "l," "n," and "o."

Item 7 shows a statistically significant difference between the two groups in terms of their feelings about school. For a X^2 value of 21.56 a P of less than .01 was obtained. The two components primarily responsible for these differences were "a" and "c", as shown in Table 34. A significantly larger proportion of Special Class Group children are considered by their teachers to show keen interest in school. At the same time, a significantly larger proportion of the Regular Class Group are considered by their teachers to be indifferent toward it.

Teacher Questionnaire. In an attempt to elicit spontaneous information about the teachers' feelings and attitudes toward the children, three questions were posed on the Questionnaire regarding the child's desirable traits, his undesirable traits, and his teacher's prediction about academic problems for him. Presumably, differences between the statements made by teachers of the Special Class Group and teachers of the Regular Class Group about the children included in the study could reveal statistically significant differences when content analysis of the responses was made.

From the total number of 194 questionnaires distributed, only three were not returned. To avoid loss in spontaneity and to minimize threat to the teachers, no follow-up requests were made. The actual responses of the teachers to the three questions asked were divided into units for content analysis. Since workers in the field of content analysis identify the need to establish categories in terms of the particular problem under investigation and as close to the actual content as possible, the a priori categories identified in Table 35 were derived. Berelson (5), and White(32), (33).

In order to substantiate the a priori categories and to make analysis of the responses obtained, it was necessary to utilize three judges to determine the degree of reliability that could be obtained from the individual statements made about each child. The decisions of the judges were tabulated and contingency coefficients were derived to establish the reliability of the categories. In every instance a probability level of less than .01 was obtained.

TABLE 35

IDENTIFICATION OF A *PRIORI* CATEGORIES FOR "TEACHER QUESTIONNAIRE"

Category	Title
A	Focus on School Learning
B	Focus on Classroom Behavior
C	Focus on Commonly Accepted Standards of Personal Characteristics
D	Focus on Interpersonal Relationships and Social Behavior
E	Focus on Interpreting or explaining the Child

Table 36 presents a summary of the major category distribution of teacher responses indicating the X^2 and level of significant differences between the groups.

TABLE 36

DISTRIBUTION OF RESPONSES BY MAJOR CATEGORIES SHOWING X^2 AND LEVELS OF SIGNIFICANCE FOR "TEACHER QUESTIONNAIRE"

CATEGORY	SPECIAL CLASS	REGULAR CLASS	PROBABILITY LEVEL
A. Focus on School Learning	155	166	$.02 < P < .05$
B. Focus on Classroom Behavior	88	99	$.05 < P < .10$
C. Focus on Commonly Accepted Standards of Personal Characteristics	109	63	$P < .01$
D. Focus on Interpersonal Relationships and Social Behavior	83	71	$.80 < P < .90$
E. Focus on Interpreting or Explaining the Child	159	126	$.20 < P < .30$
Total	594	525	

Chi Square = 13.88; df = 4; $P < .01$

The level of significance for within-group differences is presented opposite the appropriate category. (Detailed analyses of the component parts of each of the categories are presented in the Appendix, Exhibits 8, 9. As noted in Table 36, the statistical differences were found to be at less than the .01 level of significance. It appears that Category "C" is in large measure responsible for this difference. It is of interest to note that the teachers of the Special Class Group made almost twice as many responses to this Category as did the teachers of the Regular Class Group.

Detailed analysis of the responses made by the teachers showed that while the teachers expressed agreement in some areas, in others their comments and reactions reflected quite different emphases. From this analysis, the following conclusions appeared valid.

Agreement of Both Teacher Groups. Both groups of teachers expressed concern not only with academic achievement, but also with the personal and social development of the child. Expectancies in achievement indicated that both groups of teachers hoped some progress would be made. Statements concerning misbehavior revealed no significant differences for either group, but both groups felt the retarded child would need more guidance than the typical child to prevent behavior problems outside the school. Many responses of both teacher groups seemed to be excuse-making for themselves or for the child.

Different Emphases of Teachers of the Regular Class Group. Teachers of the Regular Class Group made many more comments about school problems in learning and classroom discipline than did the teachers of the Special Class Group. This is evidenced by a larger number of statements made by them in Category "A." Many did appear to recognize the child's limited ability and suggested that fewer demands be placed upon him. These rather conflicting reactions were probably due to the classroom situation in which they of necessity view the mentally retarded child in relation to his more adequate or superior peers. This probably accounts also for their feeling that it is important for the child to be tolerated by his classmates and to form a few friendships. However, they reflected the belief that the child could not gain satisfactory peer relationships without the help and guidance of the classroom teacher. In a summary of reactions to classroom behavior, it appeared that the mentally retarded child in the regular class setting gains acceptance if he tries to achieve, is quiet and cooperative, helps with classroom chores, and is clean and neat.

Even though the above-expressed reactions would appear to indicate some understanding of the mentally retarded child on the part of teachers of the Regular Class Group, the large number of skeptical comments in relation to the child's future make one question the extent of that understanding. More teachers of the Regular Class Group tended to believe that a retarded child (12.0 - 14.11 C. A.) had no future learning experiences available for him in school so would tend to meet only failure and eventually drop out of school. A larger number of them thought such children would become social problems. Such beliefs are not held by the teachers of the Special Class Group in areas where school programs for older mentally retarded children are in operation.

Different Emphases of Teachers of the Special Class Group. Although these teachers expressed concern over academic achievement, it was in relation to the child's not meeting standards of achievement when real attempts were made to set them at the child's ability level. They tended to compare the child with his peers and expect similar levels of achievement and behavior characteristics. Although the child's peers would also be mentally retarded, one wonders whether some unreality exists here since presumably individual differences among a selected population of the mentally retarded would be greater than among a normal population.

However, this objection appears to be refuted by the fact that the teachers of the Special Class Group laid more stress on the child's individual characteristics and the need for helping him develop his abilities. Many placed values on the development of motor skills, special talents, and curiosity and imagination. They placed more emphasis on the acquisition of adequate work habits and motivation in learning. The statistically significant difference in Category "C" between responses of the two groups of teachers was found to be due to the considrably greater number of responses by teachers of the Special Class Group. Apparently, more of them were concerned with such characteristics as personal appearance, good manners, social graces, character, and habits of conduct than were the teachers of the Regular Class Group.

They tended to have a much more hopeful attitude toward the child's future and felt the child could continue to make progress in special classes, but would meet failure if he were returned to a regular class. Whether the teachers of the Regular or Special Classes are correct in their prognoses for the future of such children must await further research as more programs for older retarded children are available.

Conclusions

From the analysis of material relevant to attitudes of teachers in regard to certain factors concerning mentally retarded children, the following conclusions are made in relation to Hypothesis 5:

Teacher Check List Data

(a) Level of Functioning Related to Ability. No statistically significant differences were found between the judgments of teachers of the two groups.

(b) Verbal and Performance Ability. No statistically significant differences were found between the judgments of teachers of the two groups. A higher percentage of teacher judgments of the Special Class Group are that the child's verbal ability is better than his performance ability.

(c) Physical Disabilities. Differences at less than .01 level of statistical significance were found. Presumably, this is attributable to the fact that teachers of the Special Class Group were more perceptive of a child with physical disabilities.

(d) Child Acceptance By Peer Group. Differences at less than .01 level of statistical significance were found. More teachers of the Special Class Group identified that the child is wanted as a member.

(e) Child Reactions to Peer Group. Differences between the .02 and .05 level of statistical significance were found. More teachers of the Regular Class Group judged the child as being indifferent toward his peers.

(f) Child's Manifest Fears. No statistically significant differences were found between the judgments of teachers of the two groups. Analysis of the component parts of the item revealed significant differences to exist in four instances. More teachers of the Special Class Group identified fear of criticism to exist among the children than did teachers of the Regular Class Group. This difference was less than .01 level of significance. Also teachers of the Special Class Group judged more children as manifesting no fears. The difference was between the .02 and .05 level of significance. Fear of low ability level of performance was identified more often by teachers of the Regular Class Group. The difference was between the .02 and .05 level of significance. Expression of fears in work and play was more frequently judged to occur by the teachers of the Regular Class Group. This was also at the .02 and .05 level of significance.

(g) Child's Feelings About School. Differences at less than .01 level of statistical significance were found. Analysis of the component parts revealed significant differences to exist in two instances. More teachers of the Special Class Group judged the child as being keenly interested in school. The difference was less than .01 level of statistical significance. More teachers of the Regular Class Group judged the child as being indifferent towards school. The difference was less than .01 level of statistical significance.

Teacher Questionnaire Data

(a) Focus on School Learning. Differences between .02 and .05 level of statistical significance were found. More teachers of the Regular Class Group appeared to be concerned about academic achievement of the children.

(b) Focus on Classroom Behavior. No statistically significant differences were found between the judgments of teachers of the two groups. A larger proportion of teachers of the Regular Class Group indicated concern about classroom behavior.

(c) Focus on Accepted Characteristics of Behavior. Differences at less than .01 level of statistical significance were found. More teachers of Special Class Group expressed greater concern with character, good manners, appearance, and habits of conduct than did teachers of the Regular Class Group.

(d) Focus on Interpersonal Relationships and Social Behavior. No significant differences were found between the judgments of teachers of the two groups. More teachers of the Regular Class Group reflected the belief that these children could not gain satisfactory peer relationships without guidance and more of them thought the children would become social problems.

(e) Focus on Interpreting or Explaining the Child. No. significant differences were found between the judgments of teachers of the two groups. More teachers of Special Class Group attempted explanations or made interpretations in defense of the child.

Conclusion: Hypothesis 5 is not tenable.

CHAPTER IV. SUMMARY AND RECOMMENDATIONS

Summary

It has been the immediate purpose of this study to identify and assess some of the significant factors involved in the educational placement of mentally retarded children. Behind this immediate purpose has loomed the larger intent to test the assumption which has been increasingly made in the public schools of the United States that special class programs provide the most desirable educational setting for such children. It is now necessary to determine to what extent these purposes have been achieved. From the difficulties encountered through limitations set by circumstances or by available materials and data, implications must be drawn. And from a growing conviction of the necessity for supplementary studies, recommendations need to be formulated.

When the populations for this study were selected, the basic variables for both groups were likewise those ostensibly used to determine special class placement in the public schools: namely, chronological age and intelligence quotient. It was thus expected that the control of these two variables would produce a group of children who would be comparable in the areas relevant to the study. But it was soon evident that such was not the case.

The children to fill the various cells set up by the research design were readily available in the special class cities. When it came time to match them with their regular class counterparts, difficulty was encountered. In a number of cities, it was quickly apparent that children in the 50-59 IQ group were conspicuously missing from the rolls. Where were these children?

The statistical analysis applied to the various IQ levels within the 50-75 range was equally revealing. Here it was strikingly shown that great variations in achievement existed within the 50-59 IQ group of the Special Class Group.

These two complementary findings strongly suggest the presence of hidden selective factors operating to produce the noted phenomena in both groups. Is it not at least possible that the same additional factors contributing to the wide range of variability within subgroup A from the special class cities accounted as well for the scarcity of prospects for subgroup X from the regular class cities?

The unreliability of intelligence quotient as a differentiating variable certainly implies the existence of hidden selective factors which need to be isolated, recognized, and taken into account in developing a satisfactory program for retarded children. It was found that Such factors as physiological and psychological differences may influence acceptance in special classes, and may also, in our present educational system, mean that many children, recognized as educable on the basis of IQ level, are being deprived of education entirely.

The acceptance of special class programs as the desirable type of educational placement for retarded children has been based on the assumption that such programs are able to achieve results different from those achievable in a regular class setting. The evidence of this study indicates that these differences do actually exist. The differences, however, go in opposite directions. The superior academic achievement noted for the Regular Class Group is balanced by the superior social adjustment of the Special Class Group. Both of these results must be approached with caution. The "better" academic achievement of the Regular Class Group, while statistically significant when compared with the Special Class Group, is still very modest when related to the achievement of typical children of the same teacher chronological age. Compared with the 7.0 level of achievement typical of the average 13.0

chronological age, the Special Group children at 2.7 on the Stanford Achievement Test and the Regular Group children at 3.1 are almost equally deficient. It is likewise noteworthy that neither group approximates the 3.8 level which would be expected from their mental age. At the same time, the superior social adjustment of the Special Class Group assesses their adjustment in a protected environment contrasted to the non-protected environment of the Regular Class Group. A further investigation is still called for which would compare the two groups of children in situations where they must operate individually in a world which is not adapted to their special needs. Some light on these problems can be found in a study on "The Postschool Adjustment of Slow Learning Children." (8) This investigation was carried out in Ohio schools and indicated that in community life, the members included in the study appeared to follow fairly typical patterns of community activities. The vast majority of these children followed up some years after leaving school were found able to assume responsibility for their own livelihoods.

Assessments of the relative values of regular and special class programs should attempt to evaluate strengths and weaknesses which are inherent in the concepts and should not be swayed by accidental conditions and circumstances. It would seem that many of the differences noted during the course of this investigation have resulted less from such inherent necessity than from the attitudes and beliefs of those responsible for the programs. The possibility of achieving total optimal results in either one of these settings rests upon this fact.

The inherent possibility of good social and personal adjustment in the regular class settings seems highly unlikely. In addition to the lack of peer acceptance, the constant frustration attendant upon inability to compete academically could hardly lead to desirable personal development. Even if the teacher had time and interest to devote to the mentally retarded among her pupils, she could not alter these conditions.

In the academic area, however, the possibility for optimal development within the special class setting presents a real challenge. To the degree that achievement in the regular classes is a direct product of the competition provided by typical children, the goal would be difficult. But it is possible that the stimulation provided by this competition is more than offset by its frustrations, while it would be possible to devise within special classes types of competition which would be stimulating without being frustrating. Here the guiding concepts of administrators and teachers and, behind them, of the American people influence the outcome. If it is felt that the primary purpose of special classes is to provide an environment in which mentally retarded children can be happy and adjusted, the program will be quite different from one based upon the belief that the greatest possible academic achievement is an important ingredient in their becoming adequate adults. Given this belief, it is possible that retarded children in special classes could be brought closer to their expected level of achievement than is at present realized in either type of educational placement.

Recommendations

The present investigation focuses attention upon the need for additional studies to clarify further the issues involved in educating mentally retarded children. Certain specific studies suggest themselves for this purpose.

1. It is evident from comparisons of the performances of regular and special class children (total group and subgroup data) that selective factors appear to operate in the placement of educable retarded

children in communities where special classes are maintained. Therefore, an investigation of an additional population in such cities is recommended. The identification and assessment of children who meet the criteria used in the present study but who are not in special classes should be made to determine their relationship both to their peers who have been specially placed and to the regular class children in communities without special classes. In other words, in answering the question of whether or not one type of placement is preferable to another, we need to assess three groups of children instead of two.

2. No comparative studies exist wherein two groups of mentally retarded children (i.e., regular and special class groups) in public schools are compared with a similar population in a residential school. The establishment of differences in learning and adjustment which might or might not occur between such children in community and residential settings would be extremely helpful to persons involved in state-wide planning for all retarded children and youth. It is recommended, therefore, that a population of children who meet all the criteria of the present study and who are enrolled in a residential school be compared with the groups used in the present study.

3. The conclusion of this study that differences do exist in the more adequate adjustment of the Special Class population and in the better academic performance of the Regular Class group raises several questions which demand clarification through further research. What in addition to so-called "academic" learning is the nature of what is learned in special classes which may contribute to the finding

that they are better adjusted? Or does this more adequate adjustment occur because the special placement narrows the differences within the peer group and makes adjustment easier? Will this adequacy continue when they enter the larger society outside the school? On the other hand, is there any measurable relationship between the slightly higher academic achievement of the Regular Class Group and their later success?

To obtain such answers, it is recommended that these same groups of children be studied in community settings during the first and third years after leaving school. Evidences of success and adjustment should be assessed which might clarify realistically the effect of the two types of educational placement in terms of total adjustment in community living.

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APPENDIX

EXHIBIT 1.

Superintendent
Public Schools
Board of Education
_______, Ohio

Dear Sir:

As you may know, Ohio State University received a substantial research grant from the United States Office of Education under the provisions of their Cooperative Research Program (Public Law 531, 83rd Congress). Our purpose in seeking this grant was to investigate those factors involved in the educational placement of mentally retarded children. For many years it has been hypothesized that those mentally retarded children placed in special groups profit not only in terms of educational achievement but also in general adjustment and to a greater degree than do those retarded children who remain in the regular classrooms. However, with the exception of a few studies concerning the relative social acceptability and achievement of mentally retarted children placed in special classes compared with others in regular classes, this assumption has not been based on carefully controlled studies.

For our study, we have randomly selected 100 children from the total number of children enrolled in special classes for slow learning children in Ohio. These children had to meet certain criteria, namely: in age be between 12 and 14 years, in I.Q. score between 50 and 75 points based on the Stanford Binet Intelligence test administered within the past two years, and be enrolled in a special class for the past two years.

Having identified those 100 children in special classes who meet the criteria listed, this group will then be compared with 100 randomly selected children from regular classes in communities where special classes are not maintained for slow learning children.

In September, 1957 we hope to begin the evaluation of both of these groups. A person from this Bureau will then obtain measures of these children in relation to their intelligence, achievement, social and emotional adjustment.

We are writing this letter because the children in your school district listed on the enclosed form were drawn in the sample of 100 children in special classes for the slow learning.

We would like to ask your cooperation in having these children evaluated as a part of this study. If you feel you can cooperate, it would require nothing on your part except the checking of the pertinent data about the children which has been included in this letter. We are anxious to check the children's chronological ages, including birth date, sex, and IQ score as they appear on your records. In addition, if you can tell us how many years the child has been enrolled in a special class for slow learning children, it will give us a check on the only criterion we could not obtain from state records. All of the tests to be given next year will be furnished and administered by a person from this office and will require no extra work of your school personnel.

We would appreciate hearing from you soon indicating whether or not you feel you would be willing to cooperate in this study. If so, will you please check the data on the enclosed sheet and return it to us with your letter? An additional copy is enclosed for your records. We hope it will furnish valuable information which will assist in program development for slow learning children in our state.

Most sincerely,

Project Director
Research in Mental Retardation

EXHIBIT 2.

Preliminary School List

(Name of School) ____________________ **(School District)** ____________________ **(County)** ____________________

Name of Pupil	Date of Birth	C.A.	IQ	Test Used	Date Tested	No. yrs. in this school	Will child be in school next year?

Name of Teacher ____________________

Date____________________ **Name of Superintendent** ____________________

EXHIBIT 3:

Superintendent
Public Schools
Board of Education
__________, Ohio

Dear Sir:

As you may know, the Ohio State University received a substantial research grant from the United States Office of Education under the provision of their Cooperative Research Program (Public Law 531, 83rd Congress). Our purpose in seeking this grant was to investigate those factors involved in the educational placement of mentally retarded children.

For our study we are selecting two groups of children from various school districts in Ohio. Some of these children are in regular classes while others are enrolled in special classes. Because undoubtedly you have some of these children in your regular classes we would like the opportunity of having them participate in our study. For this reason ______________________________, a member of our research team, should like to visit you to give you more details about our research project. If it is convenient it would be possible for __________________________ to visit you in your office on __________, to give you more information and to enlist your cooperation.

We would appreciate hearing from you soon indicating whether or not it is convenient for ______________________ to visit you, at the suggested time, to talk this over.

Most sincerely,

Project Director
Research in Mental Retardation

EXHIBIT 4.

IDENTIFYING DATE SHEET

______________________________ Age___ B'Date________ Sex_____ IQ________
Name

School__________________ Location___________ Grade___ Teacher___________

Days absent last year________________

Parents - (circle) living; deceased (mother, father); divorced: separated; no information

(circle) father works; mother works; both parents work; neither works; no information

(circle) P.T.A. membership - neither; one; both parents; no information

Siblings

				(Check one)	
Name	Age	Sex	Grade	Reg. Class	Spec. Class

Church Affiliation - (Circle) Attendance - never; rarely; usually; always; no information

Membership in organized school clubs or groups - (names of)

____

____

____

Membership in organized out-of-school clubs or groups - (names of)

____

____

____

Identified handicaps

____

____

EXHIBIT 5.

INTERVIEW DATA SHEET

Pupil's name________________________

Code no.______________

1. What like best about school?

2. What like least about school?

3. Any work for pay? (What kind, where?)

4. before school - (Does what - who with?)

5. What grown-up like best? (Relationship to child) Why?

6. What grown-up like least? Why?

EXHIBIT 6

TEACHER CHECK-LIST

Pupil's name ____________

Code no. ____________

1. In your opinion where is the child functioning according to his ability?

(check one) a ___ child is functioning within his ability to learn

b ___ child is functioning a little below his ability to learn

c ___ very much below

d ___ no opinion

---

2. Are you aware of any differences between the verbal ability and performance ability with concrete materials of this child?

(check one) a ___ child's verbal ability is better than his performance ability

b ___ child's performance ability is better than his verbal ability

c ___ child's performance ability and verbal ability are about the same

d ___ abilities unknown

---

3. Does this child have any visual, auditory or motor difficulties in learning? (Check all that apply)

a ___ child has visual difficulties

b ___ child has auditory difficulties

c ___ child has motor difficutlties

d ___ none

e ___ unknown

EXHIBIT 6 (Continued)

page 2 Pupil's name ____________

Code no. ____________

4. In your opinion how has the child adjusted socially to his classmates? (check the one that applies)

   a ___ child is tolerated by his classmates (accepted passively)
   b ___ child is wanted as a member of their groups
   c ___ child is actively rejected (aggressively opposed, etc.)
   d ___ child is passively rejected (avoided, et cetera)
   e ___ no opinion

---

5. What do you think are the child's feelings toward others? (check one that applies)

   a ___ child seems to like others
   b ___ child seems indifferent toward others
   c ___ child seems antagonistic toward others
   d ___ no opinion

---

6. In your opinion what emotional feelings does this child indicate in the school setting? (check all that apply)

   a ___ seems afraid to take chances
   b ___ seems afraid to make mistakes
   c ___ seems afraid of responsibility
   d ___ seems afraid to fail
   e ___ seems threatened by trying to do his best
   f ___ seems afraid of criticism
   g ___ seems afraid to appear ridiculous
   h ___ seems afraid of being imperfect

EXHIBIT 6 (Continued)

page 3

Pupil's name ____________

Code no. ____________

i ___ seems afraid to have fun

j ___ seems afraid to ask for help

k ___ seems afraid of not being accepted and wanted

l ___ seems afraid of his present low ability level of performance

m ___ seems afraid of being regarded as not "worth anything"

n List any other fears you think this child expresses in his work or play ____________

o ___ none

p ___ unknown

---

7. What is this child's attitude toward school? (check one)

a ___ keenly interested

b ___ likes school

c ___ indifferent

d ___ dislikes

e ___ dislikes very much

f ___ no opinion or other comments

EXHIBIT 7

TEACHER QUESTIONNAIRE

Pupil's name ____________________

Code no. ____________________

What do you consider to be this child's most desirable trait or characteristic?

What do you consider to be this child's least desirable trait or characteristic?

What kinds of school problems do you predict for this child?

EXHIBIT 8

Table A

DISTRIBUTION OF "TEACHER QUESTIONNAIRE" RESPONSES BY MAJOR AND SUB-CATEGORIES SHOWING X^2 VALUES AND PROBABILITY LEVELS

	SPECIAL CLASS GROUP TEACHER RESPONSES	REGULAR CLASS GROUP TEACHER RESPONSES
A. Focus on School Learning		
1. Achievement, Aptitude, Mental Ability	26	38
2. Interests, Skills, Handicaps	19	13
3. Treatment and Training	24	19
4. Application to School Work	50	48
5. Predictions	36	48
Total	155	166
Chi Square = 5.30; df = 4; .20 < P < .30		
B. Focus on Classroom Behavior		
1. Management and Discipline	28	47
2. Cooperation and Citizenship	54	44
3. Predictions	6	8
Total	88	99
Chi Square = 5.32; df = 2; .05 < P < .10		
C. Focus on Commonly Accepted Standards of Personal Characteristics		
1. Hygiene, Grooming, Appearance	30	24
2. Manners, Social Graces	14	12
3. Character, Habits of Conduct	25	12
4. Disposition	40	15
5. Predictions	--	--
Total	109	63
Chi Square = 4.74; df = 3; .10 < P < .20		
D. Focus on Interpersonal Relationships and Social Behavior		
1. Relationships	26	20
2. Behavioral Characteristics	41	29
3. Predictions	16	22
Total		
Chi Square = 2.98; df = 2; .20 < P < .30		
E. Focus on Interpreting or Explaining the Child		
1. Suggesting Areas Other than Mental Ability Influencing the Child	30	21
2. Feelings, Attitudes Toward School Learning	42	28
3. Classroom Behavior Motives and Attitudes	29	24
4. Personal Adjustment	39	28
5. Predictions	19	25
Total	159	126
Chi Square = 3.31; df = 4; .50 < P < .70		

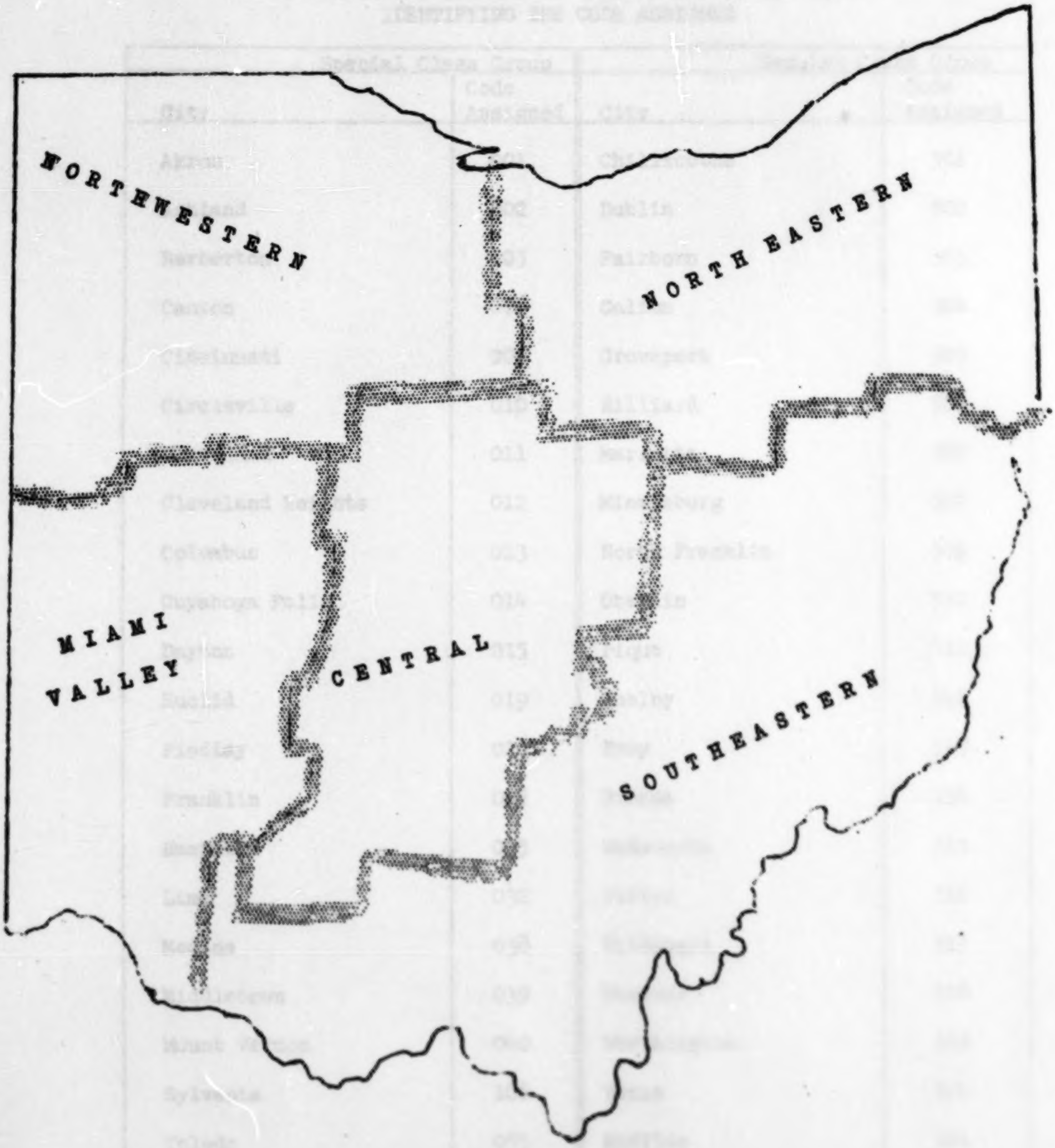
EXHIBIT 9

Table B

DISTRIBUTION OF "TEACHER QUESTIONNAIRE" RESPONSES BY MAJOR AND SUB-CATEGORIES ON ONE CHILD OR MORE

	SPECIAL CLASS GROUP TEACHERS		REGULAR CLASS GROUP TEACHERS	
	One Child	Add. Child	One Child	Add. Child
A. Focus on School Learning				
1. Achievement, Aptitude, Mental Ability	20	6	36	2
2. Interests, Skills, Handicaps	12	7	13	--
3. Treatment and Training	19	5	19	--
4. Application to School Work	37	13	44	4
5. Predictions	29	7	46	2
Total	117	38	158	8
B. Focus on Classroom Behavior				
1. Management and Discipline	27	1	43	4
2. Cooperation and Citizenship	43	11	42	2
3. Predictions	6	--	8	--
Total	76	12	93	6
C. Focus on Commonly Accepted Standards of Personal Characteristics				
1. Hygiene, Grooming, Appearance	24	6	22	2
2. Manners, Social Graces	14	--	10	2
3. Character, Habits of Conduct	20	5	12	--
4. Disposition	25	15	14	1
5. Predictions	--	--	--	--
Total	83	26	58	5
D. Focus on Interpersonal Relationships and Social Behavior				
1. Relationships	17	9	19	1
2. Behavioral Characteristics	33	8	27	2
3. Predictions	13	3	21	1
Total	63	20	67	4
E. Focus on Interpreting or Explaining the Child				
1. Suggesting Areas Other than Mental Ability Influencing the Child	25	5	21	--
2. Feelings, Attitudes Toward School Learning	35	7	27	1
3. Classroom Behavior Motives and Attitudes	23	6	23	1
4. Personal Adjustment	28	11	26	2
5. Predictions	10	9	23	2
Total	121	38	120	6

FIGURE 1.


NORTHWESTERN
NORTH EASTERN
MIAMI VALLEY
CENTRAL
SOUTHEASTERN

Geographic Regions of Ohio
Based on information obtained from Economic Geography of Ohio
by A. J. Wright, 1955

Table A

ALPHABETICAL LISTING OF CITIES USED IN THE STUDY IDENTIFYING THE CODE ASSIGNED

Special Class Group		Regular Class Group	
City	Code Assigned	City	Code Assigned
Akron	001	Chillicothe	501
Ashland	002	Dublin	502
Barberton	005	Fairborn	503
Canton	008	Galion	504
Cincinnati	009	Groveport	505
Circleville	010	Hilliard	506
Cleveland	011	Marietta	507
Cleveland Heights	012	Miamisburg	508
Columbus	013	North Franklin	509
Cuyahoga Falls	014	Oberlin	510
Dayton	015	Piqua	511
Euclid	019	Shelby	512
Findlay	020	Troy	513
Franklin	022	Urbana	514
Hamilton	025	Wadsworth	515
Lima	032	Warren	516
Medina	038	Whitehall	517
Middletown	039	Wooster	518
Mount Vernon	040	Worthington	519
Sylvania	108	Xenia	520
Toledo	055	Mifflin	521
Zanesville	058		
TOTAL	22		21